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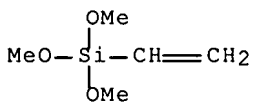
L86 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:451534 HCAPLUS Full-text
DOCUMENT NUMBER: 140:426180
TITLE: Preparation of **nonaqueous electrolyte battery** anode material for **lithium ion** secondary **battery**
INVENTOR(S): Fukuoka, Hirofumi; Aramata, Mikio; Miyawaki, Satoru; Ueno, Susumu; Momii, Kazuma
PATENT ASSIGNEE(S): Japan
SOURCE: U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004106040	A1	20040603	US 2003-721280 <--	20031126
JP 2004178917	A	20040624	JP 2002-342624 <--	20021126
KR 2004047621	A	20040605	KR 2003-83847 <--	20031125
CN 1505187	A	20040616	CN 2003-10124624 <--	20031126
PRIORITY APPLN. INFO.:			JP 2002-342624 A <--	20021126

ED Entered STN: 04 Jun 2004
AB A **nonaq. electrolyte** secondary **battery** neg. electrode material is provided wherein a neg. electrode active material containing a **lithium ion**-occluding and releasing material which has been treated with an organosilicon base **surface treating** agent is **surface coated** with a **conductive coating**. Using the neg. electrode material, a **lithium ion** secondary **battery** having a high capacity and improved cycle performance is obtainable.
IT **2768-02-7**, KBM1003
(coupling agent; preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)
RN 2768-02-7 HCAPLUS
CN Silane, ethenyltrimethoxy- (CA INDEX NAME)



IT **7440-21-3**, Silicon, uses **337529-55-2**, Silicon oxide SiO1-1.6
(preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)

RN 7440-21-3 HCAPLUS
CN Silicon (CA INDEX NAME)

Si

RN 337529-55-2 HCAPLUS
CN Silicon oxide (SiO1-1.6) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1 - 1.6	17778-80-2
Si	1	7440-21-3

IT **620168-38-9**, Silicon oxide SiO1.02
(preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)
RN 620168-38-9 HCAPLUS
CN Silicon oxide (SiO1.02) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.02	17778-80-2
Si	1	7440-21-3

IC ICM H01M004-62
ICS B05D005-12
INCL 429212000; 429232000; 427058000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST **lithium ion** secondary **battery** anode prepn
IT Dispersion (of materials)
(composite; preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)
IT Silanes
(coupling agent; preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)
IT **Coating materials**
(elec. conductive; preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)
IT Secondary **batteries**
(lithium; preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)
IT **Battery anodes**
Silylation
(preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)
IT Polysiloxanes, uses

(preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)

IT 7440-44-0, Carbon, uses
(**coating**; preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)

IT **2768-02-7**, KBM1003
(coupling agent; preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)

IT **7440-21-3**, Silicon, uses 7631-86-9, Silica, uses **337529-55-2**, Silicon oxide SiO1-1.6
(preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)

IT 7782-42-5, Graphite, uses **620168-38-9**, Silicon oxide SiO1.02
(preparation of **nonaq. electrolyte battery** anode material for **lithium ion** secondary **battery**)

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=> d que 187
L1             1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  US20040106040/PN
L3             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7440-21-3/RN
L4          5231 SEA FILE=REGISTRY ABB=ON  PLU=ON  (SI(L)O)/ELS(L)2-3/ELC.SU
                 B
L5          5231 SEA FILE=REGISTRY ABB=ON  PLU=ON  L4 AND L4
L7        274031 SEA FILE=REGISTRY ABB=ON  PLU=ON  (SI(L)O(L)C)/ELS(L)4/ELC.
                 SUB
L9          1776 SEA FILE=REGISTRY ABB=ON  PLU=ON  L5 NOT 1.7-100/O
L10         1095 SEA FILE=REGISTRY ABB=ON  PLU=ON  L9 NOT 0-0.9999/O
L11          466 SEA FILE=REGISTRY ABB=ON  PLU=ON  L10 AND TIS/CI
L12          334 SEA FILE=REGISTRY ABB=ON  PLU=ON  L11 NOT 1-100/M
L13           97 SEA FILE=REGISTRY ABB=ON  PLU=ON  L12 AND 2/ELC.SUB
L14       247430 SEA FILE=REGISTRY ABB=ON  PLU=ON  L7 NOT PMS/CI
L15        46678 SEA FILE=REGISTRY ABB=ON  PLU=ON  L14 NOT 1-100/NR
L16              QUE  ABB=ON  PLU=ON  PARTICL? OR MICROPARTICL? OR PARTICU
                 LAT? OR DUST? OR GRIT? OR GRAIN# OR GRANUL? OR POWDER? OR
                  SOOT? OR SMUT? OR FINES# OR PRILL? OR FLAKE# OR PELLET
L17              QUE  ABB=ON  PLU=ON  MU OR M(A)U OR MICRON OR MICROMETER
                  OR MICRO(W)METER OR NANOMETER OR NANO(W)METER OR  NM OR
                 N(A)M OR MM OR M(A)M
L18              QUE  ABB=ON  PLU=ON  BATTERY OR BATTERIES
L19       483078 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3
L20         7485 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L13
L23              QUE  ABB=ON  PLU=ON  NEGATIVE? ELECTROD# OR ANOD## OR NEG
                 ?(A)ELECTROD#
L24         2249 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L23(L)L19
L25          151 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20(L)L23
L26       641795 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16(L)(SIZE# OR DIAMETER?
                 DIAMETRE? OR RADIUS OR RADII OR DIMENSION? OR WIDTH? OR
                 WIDENESS?)
L27       438763 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16(2A)(SIZE# OR DIAMETER?
                  DIAMETRE? OR RADIUS OR RADII OR DIMENSION? OR WIDTH? OR
                 WIDENESS?)
L28           77 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L24 AND L27
L30           62 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28 AND L17
L31        19057 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "BATTERY ANODES"+PFT,NT/CT

L32           51 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30 AND L31
L34       388495 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "COATING MATERIALS"+PFT,NT
                 /CT
L35           19 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L24 AND L31 AND L34
L40              QUE  ABB=ON  PLU=ON  (NONAQUEOUS OR NONAQ# OR NON(A)(AQ#
                 OR AQUEOUS?))(2A)ELECTROLYT?
L41           10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND L40
L42            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND L40
L43           15 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 OR L42
L44           65 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25 AND L40
L45            2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L44 AND  L26
L46          246 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 AND L26
L47            3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L40
L48          163 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L17
L49            4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L48 AND L23
L50            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L45 OR L47 OR L49
L51            3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L40
L52            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31 AND L46
L53            7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L50 OR L51 OR L52)
L54           49 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND AMORPH?
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L57           8 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L18
L58      144234 SEA FILE=HCAPLUS ABB=ON  PLU=ON  COMPOSITES+PFT,NT/CT
L59           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L58
L60           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L54 AND (L58 OR COMPOSIT?)

L61          24 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L57 OR L59 OR L60
L62          25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L53 OR L61
L63       91757 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15
L64       91757 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15
L65        4958 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L64 AND (L19 OR L20)
L67           7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L65 AND (LI OR LITHIUM)(2A
                )ION?
L68          35 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L65 AND (L18 OR L31)
L69           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 AND SURFACE TREAT?
L70           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 AND SURFACE(2A)TREAT?

L71           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 AND L40
L72          11 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L67 OR (L69 OR L70 OR
                L71)
L74       30700 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "DISPERSION (OF MATERIALS)
                "+PFT,NT/CT
L75           0 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62 AND L74
L76          25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62 OR L75
L77         126 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L63 AND (LI OR LITHIUM)(2A
                )ION#
L78          12 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 AND L40
L79           6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 AND ANOD##(2A)ACTIV?
L80           7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 AND (CONDUCT?(A)COAT?
                OR L34)
L81          29 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L72 OR (L78 OR L79 OR
                L80)
L82          10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L81 AND COAT?
L83           8 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L43 AND (1840-2003)/PRY,AY
                ,PY
L84          16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L76 AND (1840-2003)/PRY,AY
                ,PY
L85          10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L82 AND (1840-2003)/PRY,AY
                ,PY
L86           1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L1 AND (L83 OR L84 OR
                L85)
L87           7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L83 NOT L86


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L87  ANSWER 1 OF 7  HCAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2004:1019056  HCAPLUS  Full-text
DOCUMENT NUMBER:          142:9210
TITLE:                    Anode material for secondary nonaqueous
                          electrolyte battery, its manufacture, and
                          the battery which uses the material
INVENTOR(S):              Zhang, Shou-wu; Kuba, Kanji; Watarai, Yusuke
PATENT ASSIGNEE(S):       Mitsubishi Materials Corp., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 10 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:
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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004335335	A	20041125	JP 2003-131275 <--	20030509
PRIORITY APPLN. INFO.:			JP 2003-131275 <--	20030509

ED Entered STN: 26 Nov 2004

AB The anode material comprises composite particles, having ceramics coated on a part of Li-intercalating mineral particles; where the mineral particles contain Si, Sn and/or Zn as constituent element; and the ceramics are composed of an oxide, a nitride, or a carbide, which contains Si, Ti, Al and/or Zr, and covers 20-95% total surface of the mineral particles. The anode material is manufactured by preparing 0.02-20 . **mu**.m average **particle sized** mineral **particles**, comprising ≥1 substance selected from Si, metal silicide, B doped Si, P doped Si, Zn, Sn, Zn containing solid solution, Sn containing solid solution, Zn containing intermetallic compds., and Sn containing intermetallic compds.; soling a precursor organic mol. solution, which contains Si, Ti, Al and/or Zr, by hydrolysis reaction and dehydrative polycondensation; mixing the mineral particles with the sol to coat the sol on the mineral particles; gelatinizing the sol; and firing the gel in a nonoxidative atmospheric at 600-1300° for 0.5-3 h to form composite particles which have the ceramics coated on a part of the mineral particles. The battery uses the above material as an anode active mass.

IT **7440-21-3**, Silicon, uses **7440-21-3D**, Silicon, B doped
(manufacture of **anode** materials containing ceramics coated mineral particle for secondary batteries)

RN 7440-21-3 HCAPLUS
CN Silicon (CA INDEX NAME)

Si

RN 7440-21-3 HCAPLUS
CN Silicon (CA INDEX NAME)

Si

IC ICM H01M004-38
ICS H01M004-02; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT **Battery anodes**
Secondary batteries
(manufacture of anode materials containing ceramics coated mineral particle for secondary batteries)

IT 1344-28-1, Alumina, uses **7440-21-3**, Silicon, uses **7440-21-3D**, Silicon, B doped **7440-21-3D**, Silicon, P doped 12019-69-1 12688-08-3, Carbon titanium oxide 39345-87-4, Silicon carbide oxide 171089-01-3, Iron silicide (Fe0.2Si0.8)
(manufacture of **anode** materials containing ceramics coated mineral particle for secondary batteries)

L87 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:1019055 HCAPLUS Full-text
DOCUMENT NUMBER: 142:9209
TITLE: Anode material for secondary **nonaqueous electrolyte** battery, its manufacture, and the battery which uses the material
INVENTOR(S): Chang, Shou-Bin; Kuba, Kanji; Watarai, Yusuke
PATENT ASSIGNEE(S): Mitsubishi Materials Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004335334	A	20041125	JP 2003-131274 <--	20030509
PRIORITY APPLN. INFO.:			JP 2003-131274 <--	20030509

ED Entered STN: 26 Nov 2004

AB The anode material comprises composite particles, having ceramics coated on a part or whole part of mineral particles which are capable of intercalating/decalating Li+; where the mineral particles contain Si, Sn and/or Zn as constituent element; and the ceramics are composed of an oxide, a nitride, or a carbide, which contains Si, Ti, Al and/or Zr. The anode material is manufactured by preparing 0.02-20 μm average **particle sized** mineral **particles**, comprising ≥1 substance selected from Si, metal silicide, B doped Si, P doped Si, Zn, Sn, Zn containing solid solution, Sn containing solid solution, Zn containing intermetallic compds., and Sn containing intermetallic compds.; mixing the mineral particles with a precursor organic mol. solution, containing Si, Ti, Al and/or Zr; gelatinizing the mixture by hydrolysis reaction and dehydrative polycondensation; firing the gel mixture in a nonoxidative atmospheric at 600-1300° for 0.5-3 h to form composite particles which have the ceramics coated on a part or whole part of the mineral particles. The battery uses the above material as an anode active mass.

IT **7440-21-3**, Silicon, uses **7440-21-3D**, Silicon, B doped
(manufacture of **anode** materials containing ceramics coated mineral particle for secondary batteries)
RN 7440-21-3 HCAPLUS
CN Silicon (CA INDEX NAME)

Si

RN 7440-21-3 HCAPLUS
CN Silicon (CA INDEX NAME)

Si

IC ICM H01M004-38
ICS H01M004-02; H01M004-62; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT **Battery anodes**
Secondary batteries
(manufacture of anode materials containing ceramics coated mineral particle for secondary batteries)
IT 1344-28-1, Alumina, uses **7440-21-3**, Silicon, uses **7440-21-3D**, Silicon, B doped **7440-21-3D**, Silicon, P doped 12019-69-1 12688-08-3, Carbon titanium oxide 39345-87-4, Silicon carbide oxide 171089-01-3, Iron silicide (Fe0.2Si0.8)
(manufacture of **anode** materials containing ceramics coated mineral particle for secondary batteries)

L87 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:720383 HCAPLUS Full-text
DOCUMENT NUMBER: 141:210142
TITLE: Button-type secondary lithium batteries capable of reflow soldering
INVENTOR(S): Kanno, Yoshimi; Koseki, Hiroyuki; Watanabe, Shunji; Sakai, Tsugio
PATENT ASSIGNEE(S): SII Microparts Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004247119	A	20040902	JP 2003-34601 <--	20030213
US 2004219424	A1	20041104	US 2004-766589 <--	20040128

PRIORITY APPLN. INFO.: JP 2003-34601 A 20030213 <--

ED Entered STN: 03 Sep 2004
AB In the batteries including cathodes, anodes, **electrolytes** containing **nonaq.** solvents and salts, separators, and gaskets, surfaces of active mass particles of the cathodes and/or anodes are coated with oil-repellent substances. Preferably, the surfaces are coated with fluoropolymers or oil-repellent conductors.
IT **7440-21-3**, Silicon, uses
(**anode** active mass; heat-resistant button-type secondary Li batteries including cathode and/or **anode** active mass particles coated with oil-repellent substances)
RN 7440-21-3 HCAPLUS
CN Silicon (CA INDEX NAME)

Si

IC ICM H01M004-62
ICS H01M002-08; H01M002-16; H01M004-02; H01M004-40; H01M004-48; H01M004-58; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38, 40

IT **Battery anodes**
Battery cathodes
Battery electrolytes
Gaskets
Heat-resistant materials
Secondary battery separators
(heat-resistant button-type secondary Li batteries including cathode and/or anode active mass particles coated with oil-repellent substances)

IT **Coating materials**
(oil-resistant; heat-resistant button-type secondary Li batteries including cathode and/or anode active mass particles coated with oil-repellent substances)

IT 1314-35-8, Tungsten oxide (WO3), uses **7440-21-3**, Silicon, uses 12036-22-5, Tungsten oxide (WO2) 12798-95-7 113443-18-8, Silicon oxide (SiO)
(**anode** active mass; heat-resistant button-type secondary Li batteries including cathode and/or **anode** active mass particles coated with oil-repellent substances)

L87 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:250433 HCAPLUS Full-text
DOCUMENT NUMBER: 140:273557
TITLE: Secondary **nonaqueous-electrolyte** batteries showing excellent charge-discharge cycling performance
INVENTOR(S): Fujiwara, Aiichiro; Sato, Asako; Takabayashi, Junichi; Kitayama, Hiroshi
PATENT ASSIGNEE(S): Toshiba Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004095306	A	20040325	JP 2002-254124 <--	20020830
PRIORITY APPLN. INFO.:			JP 2002-254124 <--	20020830

ED Entered STN: 26 Mar 2004
AB The batteries comprise anodes with d. of 1.1-1.4 g/cm3 and containing Si-containing particles (a) having (at least partially formed) carbonaceous coatings with D50 (50% grain diameter) 20-40 .**mu** .m, first graphitic particles with D50 5-20 μm, and second graphitic particles with D50 2-10 μm.
IT **7440-21-3**, Silicon, uses
(**anodes** containing Si-containing particles with carbonaceoua coatings and graphitic particles for secondary batteries)
RN 7440-21-3 HCAPLUS
CN Silicon (CA INDEX NAME)

Si

IC ICM H01M004-02
ICS H01M004-38; H01M004-58; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **nonaq electrolyte** battery anode silicon carbonaceous coating; graphite anode **particle size** distribution battery
IT **Battery anodes**
Secondary batteries
(anodes containing Si-containing particles with carbonaceoua coatings and graphitic particles for secondary batteries)
IT **Particle size** distribution
(graphite; anodes containing Si-containing particles with carbonaceoua coatings and graphitic particles for secondary batteries)
IT **7440-21-3**, Silicon, uses 7782-42-5, Graphite, uses
(**anodes** containing Si-containing particles with carbonaceoua coatings and graphitic particles for secondary batteries)

L87 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:735270 HCAPLUS Full-text
DOCUMENT NUMBER: 139:263296
TITLE: Secondary **nonaqueous electrolyte** battery without anode deformation or electrolytic solution maldistribution and its manufacture
INVENTOR(S): Nakamoto, Takayuki; Nanai, Norishige; Bito, Yasuhiko; Kasamatsu, Shinji; Nitta, Yoshiaki
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003263979	A	20030919	JP 2002-66651 <--	20020312
PRIORITY APPLN. INFO.:			JP 2002-66651 <--	20020312

ED Entered STN: 19 Sep 2003
AB In manufacturing the battery, an anode is formed by filling an anode active substance with average **particle size** d 0.5-50 . **mu**.m into a current collector having continuous pores, sp. surface area 0.002-0.06 m2/g, and porosity 60-97%. In the obtained anode, 10-25 volume% of the continuous pores are filled with the active substance, and the rate of the bonding area between the active substance and the current collector to the surface area of the active substance is 5-40%. Since deformation of anode or maldistribution of an electrolytic solution during charging and discharging is prevented, the battery has high capacity and long cycle life.
IT **7440-21-3**, Silicon, uses
(**anode** active substance; manufacture of **nonaq**. **electrolyte** battery without **anode** deformation or electrolytic solution maldistribution for high capacity and long cycle life)
RN 7440-21-3 HCAPLUS
CN Silicon (CA INDEX NAME)

Si

IC ICM H01M004-02
ICS H01M004-38; H01M004-66; H01M004-80; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56
ST battery anode deformation electrolytic soln maldistribution prevention; **nonaq electrolyte** battery anode manuf
IT **Battery anodes**
(manufacture of **nonaq. electrolyte** battery without anode deformation or electrolytic solution maldistribution for high capacity and long cycle life)
IT Silicon alloy, base
Tin alloy, base
(anode active substance; manufacture of **nonaq. electrolyte** battery without anode deformation or electrolytic solution maldistribution for high capacity and long cycle life)
IT **7440-21-3**, Silicon, uses 7440-31-5, Tin, uses 12787-61-0
57952-74-6
(**anode** active substance; manufacture of **nonaq. electrolyte** battery without **anode** deformation or electrolytic solution maldistribution for high capacity and long cycle life)
IT 7440-02-0, Nickel, uses 7440-50-8, Copper, uses 11122-89-7
(current collector; manufacture of **nonaq. electrolyte** battery without anode deformation or electrolytic solution maldistribution for high capacity and long cycle life)

L87 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:279725 HCAPLUS Full-text
DOCUMENT NUMBER: 138:306758
TITLE: Anode material, its manufacture, anode using the material, secondary **nonaqueous electrolyte** lithium battery and secondary lithium polymer battery using the anode
INVENTOR(S): Tokai, Yusuke; Li, Chang-Gui; Sugihara, Tadashi
PATENT ASSIGNEE(S): Mitsubishi Materials Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003109590	A	20030411	JP 2001-303060 <--	20010928
PRIORITY APPLN. INFO.:			JP 2001-303060 <--	20010928

ED Entered STN: 11 Apr 2003
AB The anode material contains a polycryst. Si powder having average **particle size** 1-10μm as main component; and is manufactured by mixing the polycryst. Si powder or a single crystalline Si powder with ≥1 powder, which has m.p. higher than either or both Si powders and is selected from oxide, nitride and carbide powders; preparing a Si melt by heating the mixture in an inert gas atmospheric at 1410-1550°; dispersing the oxide, nitride and/or carbide powder in the Si melt; preparing the polycrystal Si lumps by cooling the melt mixture

with cooling speed 1-30°C/min; and milling the Si lumps. The batteries uses an anode, containing the above mat and a conductive assistant agent.

IT **7440-21-3P**, Silicon, uses
(polycryst.; manufacture of **anode** materials containing polycrystal Si powders with controlled **particle size** for secondary lithium batteries)

RN 7440-21-3 HCAPLUS

CN Silicon (CA INDEX NAME)

IC ICM H01M004-38
ICS H01M004-02; H01M004-62; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT **Battery anodes**
(manufacture of anode materials containing polycrystal Si powders with controlled **particle size** for secondary lithium batteries)

IT 7440-44-0, Carbon, uses
(conductive assistant agent; manufacture of anode materials containing polycrystal Si powders with controlled **particle size** for secondary lithium batteries)

IT 1344-28-1P, Alumina, uses
(manufacture of anode materials containing polycrystal Si powders with controlled **particle size** for secondary lithium batteries)

IT **7440-21-3P**, Silicon, uses
(polycryst.; manufacture of **anode** materials containing polycrystal Si powders with controlled **particle size** for secondary lithium batteries)

L87 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:119681 HCAPLUS Full-text
DOCUMENT NUMBER: 136:170265
TITLE: Manufacture of anode for secondary **nonaqueous electrolyte** battery and the battery
INVENTOR(S): Fukumoto, Yusuke; Okochi, Masaya; Ohata, Tsumoru
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002050353	A	20020215	JP 2000-234448 <--	20000802
PRIORITY APPLN. INFO.:			JP 2000-234448 <--	20000802

ED Entered STN: 15 Feb 2002

AB The anode is prepared by applying a ≤60 μm thick layer of an active mass paste, containing a conductor and a binder, on both side of a collector; where the active mass has a Si, Sn, and/or Zn solid core covered with a solid layer

of a solid solution or intermetallic compound of the core component and Group 2, 12, 14, and/or Group 14 element, and the paste has a **particle size** distribution with D50 3-25 μm and D90 ≤50 . **mu**.m.

IT **7440-21-3**, Silicon, uses
(manufacture of solid coated silicon **particles** with controlled **size** distribution for secondary lithium battery **anodes**)

RN 7440-21-3 HCAPLUS

CN Silicon (CA INDEX NAME)

Si

IC ICM H01M004-38
ICS H01M004-02; H01M004-04; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST battery anode silicon solid soln coating; tin anode solid coating battery; zinc anode solid coating battery; **particle size** distribution battery anode paste; intermetallic compd coating battery anode particle

IT **Battery anodes**
Particle size
(manufacture of solid coated silicon **particles** with controlled **size** distribution for secondary lithium battery anodes)

IT **7440-21-3**, Silicon, uses 12201-89-7, Nickel silicide (NiSi2)
(manufacture of solid coated silicon **particles** with controlled **size** distribution for secondary lithium battery **anodes**)

```
=> d que l88
L1             1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  US20040106040/PN
L3             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7440-21-3/RN
L4          5231 SEA FILE=REGISTRY ABB=ON  PLU=ON  (SI(L)O)/ELS(L)2-3/ELC.SU
                 B
L5          5231 SEA FILE=REGISTRY ABB=ON  PLU=ON  L4 AND L4
L7        274031 SEA FILE=REGISTRY ABB=ON  PLU=ON  (SI(L)O(L)C)/ELS(L)4/ELC.
                 SUB
L9          1776 SEA FILE=REGISTRY ABB=ON  PLU=ON  L5 NOT 1.7-100/O
L10         1095 SEA FILE=REGISTRY ABB=ON  PLU=ON  L9 NOT 0-0.9999/O
L11          466 SEA FILE=REGISTRY ABB=ON  PLU=ON  L10 AND TIS/CI
L12          334 SEA FILE=REGISTRY ABB=ON  PLU=ON  L11 NOT 1-100/M
L13           97 SEA FILE=REGISTRY ABB=ON  PLU=ON  L12 AND 2/ELC.SUB
L14       247430 SEA FILE=REGISTRY ABB=ON  PLU=ON  L7 NOT PMS/CI
L15        46678 SEA FILE=REGISTRY ABB=ON  PLU=ON  L14 NOT 1-100/NR
L16              QUE  ABB=ON  PLU=ON  PARTICL? OR MICROPARTICL? OR PARTICU
                 LAT? OR DUST? OR GRIT? OR GRAIN# OR GRANUL? OR POWDER? OR
                  SOOT? OR SMUT? OR FINES# OR PRILL? OR FLAKE# OR PELLET
L17              QUE  ABB=ON  PLU=ON  MU OR M(A)U OR MICRON OR MICROMETER
                  OR MICRO(W)METER OR NANOMETER OR NANO(W)METER OR  NM OR
                 N(A)M OR MM OR M(A)M
L18              QUE  ABB=ON  PLU=ON  BATTERY OR BATTERIES
L19       483078 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3
L20         7485 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L13
L23              QUE  ABB=ON  PLU=ON  NEGATIVE? ELECTROD# OR ANOD## OR NEG
                 ?(A)ELECTROD#
L24         2249 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L23(L)L19
L25          151 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20(L)L23
L26       641795 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16(L)(SIZE# OR DIAMETER?
                 DIAMETRE? OR RADIUS OR RADII OR DIMENSION? OR WIDTH? OR
                 WIDENESS?)
L27       438763 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16(2A)(SIZE# OR DIAMETER?
                  DIAMETRE? OR RADIUS OR RADII OR DIMENSION? OR WIDTH? OR
                 WIDENESS?)
L28           77 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L24 AND L27
L30           62 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28 AND L17
L31        19057 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "BATTERY ANODES"+PFT,NT/CT

L32           51 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30 AND L31
L34       388495 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "COATING MATERIALS"+PFT,NT
                 /CT
L35           19 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L24 AND L31 AND L34
L40              QUE  ABB=ON  PLU=ON  (NONAQUEOUS OR NONAQ# OR NON(A)(AQ#
                 OR AQUEOUS?))(2A)ELECTROLYT?
L41           10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND L40
L42            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND L40
L43           15 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 OR L42
L44           65 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25 AND L40
L45            2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L44 AND  L26
L46          246 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 AND L26
L47            3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L40
L48          163 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L17
L49            4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L48 AND L23
L50            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L45 OR L47 OR L49
L51            3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L40
L52            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31 AND L46
L53            7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L50 OR L51 OR L52)
L54           49 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND AMORPH?
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L57           8 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L18
L58      144234 SEA FILE=HCAPLUS ABB=ON  PLU=ON  COMPOSITES+PFT,NT/CT
L59           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L58
L60           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L54 AND (L58 OR COMPOSIT?)

L61          24 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L57 OR L59 OR L60
L62          25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L53 OR L61
L63       91757 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15
L64       91757 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15
L65        4958 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L64 AND (L19 OR L20)
L67           7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L65 AND (LI OR LITHIUM)(2A
                )ION?
L68          35 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L65 AND (L18 OR L31)
L69           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 AND SURFACE TREAT?
L70           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 AND SURFACE(2A)TREAT?

L71           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 AND L40
L72          11 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L67 OR (L69 OR L70 OR
                L71)
L74       30700 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "DISPERSION (OF MATERIALS)
                "+PFT,NT/CT
L75           0 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62 AND L74
L76          25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62 OR L75
L77         126 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L63 AND (LI OR LITHIUM)(2A
                )ION#
L78          12 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 AND L40
L79           6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 AND ANOD##(2A)ACTIV?
L80           7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 AND (CONDUCT?(A)COAT?
                OR L34)
L81          29 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L72 OR (L78 OR L79 OR
                L80)
L82          10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L81 AND COAT?
L83           8 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L43 AND (1840-2003)/PRY,AY
                ,PY
L84          16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L76 AND (1840-2003)/PRY,AY
                ,PY
L85          10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L82 AND (1840-2003)/PRY,AY
                ,PY
L86           1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L1 AND (L83 OR L84 OR
                L85)
L88          16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L84 NOT L86


=> d l88 1-16 ibib ed abs hitstr hitind

L88  ANSWER 1 OF 16  HCAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:        2005:522905  HCAPLUS  Full-text
DOCUMENT NUMBER:         143:62657
TITLE:                   Electrode active mass for secondary
                         nonaqueous electrolyte
                         battery, its manufacture, and the
                         battery
INVENTOR(S):             Yamada, Masayuki; Shirasawa, Kaori; Ueda, Atsushi;
                         Aoyama, Shigeo
PATENT ASSIGNEE(S):      Hitachi Maxell Ltd., Japan
SOURCE:                  Jpn. Kokai Tokkyo Koho, 19 pp.
                         CODEN: JKXXAF
DOCUMENT TYPE:           Patent
LANGUAGE:                Japanese
FAMILY ACC. NUM. COUNT:  1
```

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005158721	A	20050616	JP 2004-316920 <--	20041029
JP 3992708	B2	20071017		
PRIORITY APPLN. INFO.:			JP 2003-373519 <--	A 20031031

ED Entered STN: 17 Jun 2005

AB The electrode active mass are composite **particles** containing Li intercalating **particles**, with a conductive carbonaceous coating, and has ≥1 pore distribution peak in the range of 0.001-0.2 μm, on it pore **size** distribution curve determined by Hg intrusion porosimetry. The electrode active mass is manufactured by preparing the composite **particles** containing Li intercalating **particles** having BET surface ≥5 m2/g, and heating the **granules** and a hydrocarbon gas for a gas phase deposition of the carbonaceous coating.

IT **113443-18-8**, Silicon oxide (SiO)
(structure and manufacture of composite lithium intercalating electrode active mass particles with conductive carbonaceous coatings for secondary lithium **batteries**)

RN 113443-18-8 HCAPLUS

CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

IC ICM H01M004-58
ICS H01M004-02; H01M004-38; H01M004-48; H01M004-62; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium **battery** electrode carbonaceous coating active mass manuf; pore size distribution carbonaceous coating electrode active mass

IT **Battery** electrodes
(structure and manufacture of composite lithium intercalating electrode active mass particles with conductive carbonaceous coatings for secondary lithium **batteries**)

IT Carbon black, uses
Carbonaceous materials (technological products)
(structure and manufacture of composite lithium intercalating electrode active mass particles with conductive carbonaceous coatings for secondary lithium **batteries**)

IT 1307-96-6, Cobalt oxide (CoO), uses 7440-44-0, Carbon, uses 12031-95-7, Lithium titanium oxide (Li4Ti5O12) **113443-18-8**, Silicon oxide (SiO) 126066-81-7, Boron silicide (B0.3Si0.7) 854733-27-0, Cobalt lithium nickel nitride (Co0.4Li2.5Ni0.1N)
(structure and manufacture of composite lithium intercalating electrode active mass particles with conductive carbonaceous coatings for secondary lithium **batteries**)

L88 ANSWER 2 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:698664 HCAPLUS Full-text
DOCUMENT NUMBER: 139:183506
TITLE: Scraper blades and doctor blades with a nickel coating containing wear-resistant particles
INVENTOR(S): Sundberg, Roland; Lunnerfjord, Allan; Gaven,

Jan-Aake
PATENT ASSIGNEE(S): Swedev AB, Swed.
SOURCE: Swed., 17 pp.
CODEN: SSXXAY
DOCUMENT TYPE: Patent
LANGUAGE: Swedish
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SE 519466	C2	20030304	SE 2000-4506 <--	20001207
WO 2002046526	A1	20020613	WO 2001-SE2637 <--	20011129
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1349986	A1	20031008	EP 2001-999701 <--	20011129
EP 1349986	B1	20060607		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004515651	T	20040527	JP 2002-548235 <--	20011129
AT 329083	T	20060615	AT 2001-999701 <--	20011129
US 2004137261	A1	20040715	US 2004-433771 <--	20040113
US 6841264	B2	20050111		
PRIORITY APPLN. INFO.:			SE 2000-4506 A <--	20001207
			WO 2001-SE2637 W <--	20011129

ED Entered STN: 08 Sep 2003

AB Steel scraper blades and doctor blades contain a composite Ni coating. The coating consists of an electrodeposited Ni layer containing wear-resistant **particles**. Preferably, the coating contains ≥2 electrodeposited Ni layers with different compns.; the coatings can be differently formulated on different blade sections. Amount of the wear-resistant oxide, carbide, or nitride **particles** in the bath is 5-30 volume%, and their **particle size** is ≥2 μm. The total thickness of the coating on the blade underside and overside is 8-25 μm and 3-15 μm, resp. The electrodeposited coating is continuously deposited in ≥1 electrolytic cell containing an electrolytic bath with ≥1 Ni salt and also the wear-resistant **particles** suspended in ≥1 of the cells. Optionally, the coated blades are then heat treated ≤30 min at 200-600°.

IT **113443-18-8**, Silicon oxide (SiO)
(wear-resistant particles in nickel coating for scraper blades and doctor blades)
RN 113443-18-8 HCAPLUS
CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

IC ICM D21G003-00
CC 55-6 (Ferrous Metals and Alloys)
Section cross-reference(s): 57
IT Blades
Cermets
Electrodeposition
Electrodeposits
(scraper blades and doctor blades with nickel coating containing wear-resistant particles)
IT 409-21-2, Silicon carbide (SiC), uses 1314-13-2, Zinc oxide, uses 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 10043-11-5, Boron nitride (BN), uses 12033-89-5, Silicon nitride, uses 12070-08-5, Titanium carbide (TiC) 13463-67-7, Titania, uses **113443-18-8**, Silicon oxide (SiO)
(wear-resistant particles in nickel coating for scraper blades and doctor blades)

L88 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:420640 HCAPLUS Full-text
DOCUMENT NUMBER: 139:156793
TITLE: Visible photoluminescence in **amorphous** SiOx thin films prepared by silicon evaporation under a molecular oxygen atmosphere
AUTHOR(S): Molinari, M.; Rinnert, H.; Vergnat, M.
CORPORATE SOURCE: Laboratoire de Physique des Materiaux, (U.M.R. C.N.R.S. No 7556), Universite Henri Poincare Nancy 1, Vandoeuvre-les-Nancy, 54506, Fr.
SOURCE: Applied Physics Letters (**2003**), 82(22), 3877-3879
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 02 Jun 2003
AB A simple reactive evaporation method is proposed to prepare light-emitting **amorphous** SiOx thin films. By evaporating pure Si in a controlled mol. O atmospheric, it is possible to obtain a very large **composition** range. By changing the pressure in the preparation chamber, x can be varied from 0.7 to 1.85. The **composition** and the structure of the films were studied using energy dispersive x-ray, IR absorption and x-ray photoelectron spectroscopies. The samples contain **amorphous** Si clusters dispersed inside an insulating Si oxide matrix. The room-temperature photoluminescence properties were then measured. By conveniently choosing the O pressure, the as-deposited films exhibit visible photoluminescence without any annealing post-treatments. The luminescence intensity initially increases with excess Si concentration and then disappears for a too-high Si excess. The above effect is interpreted in terms of confinement of the **amorphous** Si clusters in the insulating matrix.
IT **111446-23-2**, Silicon oxide (SiO1.3) **145114-32-5**, Silicon oxide (SiO1.6)
(visible photoluminescence in **amorphous** SiOx thin films prepared by silicon evaporation under mol. oxygen atmospheric)
RN 111446-23-2 HCAPLUS
CN Silicon oxide (SiO1.3) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.3	17778-80-2
Si	1	7440-21-3

RN 145114-32-5 HCAPLUS
CN Silicon oxide (SiO1.6) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.6	17778-80-2
Si	1	7440-21-3

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 78
ST silicon oxide **amorphous** luminescence IR spectra XPS
IT IR spectra
X-ray photoelectron spectra
(of **amorphous** SiOx thin films)
IT Films
Luminescence
(visible photoluminescence in **amorphous** SiOx thin films prepared by silicon evaporation under mol. oxygen atmospheric)
IT Clusters
Particle size
(visible photoluminescence in **amorphous** SiOx thin films with Si cluster **particle size**)
IT 7440-21-3, Silicon, properties 7782-44-7, Oxygen, properties
(visible photoluminescence in **amorphous** SiOx thin films prepared by silicon evaporation under mol. oxygen atmospheric)
IT 60676-86-0, Vitreous Silica **111446-23-2**, Silicon oxide (SiO1.3) 126447-59-4, Silicon oxide (SiO0.07) **145114-32-5**, Silicon oxide (SiO1.6) 182305-70-0, Silicon oxide (SiO1.85)
(visible photoluminescence in **amorphous** SiOx thin films prepared by silicon evaporation under mol. oxygen atmospheric)
RÉFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:163297 HCAPLUS Full-text
DOCUMENT NUMBER: 139:75597
TITLE: Influence of the temperature on the photoluminescence of silicon clusters embedded in a silicon oxide matrix
AUTHOR(S): Rinnert, H.; Vergnat, M.
CORPORATE SOURCE: Laboratoire de Phys. des Materiaux, Univ. Henri Poincare Nancy 1, Vandoeuvre-le` s-Nancy, 54506, Fr.
SOURCE: Physica E: Low-Dimensional Systems & Nanostructures (Amsterdam, Netherlands) (**2003**), 16(3-4), 382-387
CODEN: PELNFM; ISSN: 1386-9477
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 04 Mar 2003

AB **Amorphous** Si oxide thin films were prepared by coevapn. of Si and SiO in ultra-high vacuum. Different **compns**. were obtained by changing the evaporation rate of Si. After thermal annealing treatments, the dissociation of the Si oxide in pure Si and SiO2 gives Si clusters embedded in a Si oxide matrix. Thus the samples were annealed to different temps. up to 950°. Depending on the annealing temperature and on the **composition**, different cluster **sizes** were obtained. The photoluminescence (PL) energy depends on the cluster **size** and a large range of wavelengths was obtained from 500 to 750 nm. The PL, attributed to a confinement effect of the electron-hole pairs in the Si **particles**, was studied as a function of the temperature The continuous decrease of PL intensity with the temperature from 77 to 500 K depends on the structure of the samples. For samples with well-separated clusters, the PL decreases rapidly with the temperature For samples containing clusters separated by a small distance, the PL weakly depends on the temperature No shift of the energy is observed The results are discussed by taking into account the competition between the radiative recombination in the Si clusters and the nonradiative escape of the carriers via a hopping mechanism.

IT **113443-18-8**, Silicon oxide (SiO)
(influence of temperature on photoluminescence of silicon clusters embedded in a silicon oxide matrix)

RN 113443-18-8 HCAPLUS

CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76

IT **113443-18-8**, Silicon oxide (SiO)
(influence of temperature on photoluminescence of silicon clusters embedded in a silicon oxide matrix)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 5 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:976165 HCAPLUS Full-text

DOCUMENT NUMBER: 138:42052

TITLE: **Anode** material containing coated silicon oxide for secondary **nonaqueous-electrolyte battery**

INVENTOR(S): Miyawaki, Satoru; Aramata, Mikio; Fukuoka, Hirofumi; Ueno, Susumu

PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002373653	A	20021226	JP 2001-181830 <--	20010615

PRIORITY APPLN. INFO.: JP 2001-181830 20010615

<--

ED Entered STN: 27 Dec 2002
AB The title **anode** material contains conductive SiOx **powder** containing SiOx having average **particle size** d50(A) 0.2-20 μm coated with a conductive substance having average **particle size** d50(B) 20 **nm** to 13 μm [where d50(A)/d50(B) ≥1.5] by mech. surface fusion treatment. Preferably, the **anode** contains SiOx (x = 0.6-1.5). The resulting **battery** has high capacity and long cycle life.
IT **113443-18-8P**, Silicon oxide (SiO)
(**anode** material containing coated silicon oxide for secondary **nonaq.-electrolyte battery**)
RN 113443-18-8 HCAPLUS
CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

IC ICM H01M004-58
ICS C01B033-113; H01M004-02; H01M004-04; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST silicon oxide **anode** secondary nonaq **battery**
IT **Battery anodes**
(**anode** material containing coated silicon oxide for secondary **nonaq.-electrolyte battery**)
IT **113443-18-8P**, Silicon oxide (SiO)
(**anode** material containing coated silicon oxide for secondary **nonaq.-electrolyte battery**)
IT 7782-42-5P, Graphite, uses
(coating; **anode** material containing coated silicon oxide for secondary **nonaq.-electrolyte battery**)

L88 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:936873 HCAPLUS Full-text
DOCUMENT NUMBER: 138:140003
TITLE: SiOx-based anodes for secondary lithium **batteries**
AUTHOR(S): Yang, J.; Takeda, Y.; Imanishi, N.; Capiglia, C.; Xie, J. Y.; Yamamoto, O.
CORPORATE SOURCE: Department of Chemistry, Mie University, Mie, Tsu, 514-8507, Japan
SOURCE: Solid State Ionics (2002), 152-153, 125-129
CODEN: SSIOD3; ISSN: 0167-2738
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 10 Dec 2002
AB Silicon oxide **powders** with different oxygen contents and **particle sizes** have been examined as anode materials for lithium-ion **batteries**. SiO0.8 electrode can provide a reversible capacity of .apprx.1600 mA-h/g over a voltage range 0.02-1.4 V vs. Li. The capacity drops with the increase in the oxygen content. Limited lithium insertion, however, alleviates the host volume expansion and thereby significantly improves the cyclability. In addition, the cycle performance is also dependent on the electrode fabrication method. By **powder** mixing and pressing, the electrode shows a larger insertion

capacity, however the use of N-methylpyrrolidone solvent for dispersing poly(vinylidene difluoride) binder suppresses the capacity fade on cycling.

IT **107875-69-4**, Silicon oxide (SiO1.1) **113443-18-8**, Silicon oxide (SiO)
(silicon oxide-based anodes for lithium secondary **batteries**)

RN 107875-69-4 HCAPLUS
CN Silicon oxide (SiO1.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.1	17778-80-2
Si	1	7440-21-3

RN 113443-18-8 HCAPLUS
CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST silicon oxide anode lithium **battery**
IT **Battery anodes**
(silicon oxide-based anodes for lithium secondary **batteries**)
IT 106496-83-7, Silicon oxide (SiO0.8) **107875-69-4**, Silicon oxide (SiO1.1) **113443-18-8**, Silicon oxide (SiO)
(silicon oxide-based anodes for lithium secondary **batteries**)
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:352138 HCAPLUS Full-text
DOCUMENT NUMBER: 137:50401
TITLE: Structure-property relationships in dispersion-hardened Ni-SiO and Ni-Al2O3 films
AUTHOR(S): Il'insky, A. I.; Lyabuk, S. I.; Kogut, S. K.
CORPORATE SOURCE: National Technical University "Kharkiv Polytechnical Institute", Kharkov, 61002, Ukraine
SOURCE: Functional Materials (2001), 8(3), 535-538
CODEN: FMUAB4; ISSN: 1027-5495
PUBLISHER: National Academy of Sciences of Ukraine, Institute for Single Crystals
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 12 May 2002
AB Composite films of Ni-SiO and Ni-Al2O3 with the oxide phase content up to 2 volume% were prepared by vapor deposition method. The film structure study by TEM and FIM techniques revealed the presence of SiO nanoscale **particles** of 10-30 nm **size** and Al2O3 ones of 4-10 nm **size** distributed homogeneously in the polycryst. Ni matrix of .apprx.200 nm average **grain size**. The films exhibited an extremely high level of strength (1100 and 1120 MPa for SiO- and Al2O3-

containing films, correspondingly) and wear resistance. The stress relaxation in the composites is also considered.

IT **113443-18-8**, Silicon oxide (SiO)
(composite film reinforcement; structure - mech. property relationships in dispersion-hardened Ni-SiO and Ni-Al2O3 composite films)

RN 113443-18-8 HCAPLUS

CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

CC 56-4 (Nonferrous Metals and Alloys)

IT **Metal matrix composites**
(film; structure - mech. property relationships in dispersion-hardened Ni-SiO and Ni-Al2O3 composite films)

IT 1344-28-1, Alumina, properties **113443-18-8**, Silicon oxide (SiO)
(composite film reinforcement; structure - mech. property relationships in dispersion-hardened Ni-SiO and Ni-Al2O3 composite films)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 8 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:351320 HCAPLUS Full-text

DOCUMENT NUMBER: 135:213318

TITLE: Novel composite anodes based on nano-oxides and Li2.6Co0.4N for lithium ion **batteries**

AUTHOR(S): Yang, J.; Takeda, Y.; Imanishi, N.; Yamamoto, O.

CORPORATE SOURCE: Department of Chemistry, Faculty of Engineering, Mie University, Tsu, Mie, 514-8507, Japan

SOURCE: Electrochimica Acta (**2001**), 46(17), 2659-2664
CODEN: ELCAAV; ISSN: 0013-4686

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 17 May 2001

AB The use of nano-**sized** SnO and SiO1.1 **powders** as anode materials for lithium ion **batteries** can give high cycle capacities. However, these metallic oxides show striking irreversibility in the first cycle. This study focuses on the irreversibility compensation of such oxides by Li2.6Co0.4N compound The mixed hosts for a new composite electrode can offer an initial efficiency close to 100%. The cycle performance is improved significantly by choosing a suitable electrode binder and electron conductor. The rechargeability of SiO1.1-containing electrodes is strongly dependent on cell construction. A packed electrode demonstrates a much better cycling stability than a hanging one in the present composition range. The changes in microstructure of the active materials on cycling have been followed by X-ray diffraction anal.

IT **107875-69-4**, Silicon oxide (SiO1.1)
(composite anodes based on nano-oxides and Li2.6Co0.4N for lithium ion **batteries**)

RN 107875-69-4 HCAPLUS

CN Silicon oxide (SiO1.1) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.1	17778-80-2
Si	1	7440-21-3

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary **battery** anode cobalt lithium nitride
IT Anodes
(composite anodes based on nano-oxides and Li2.6Co0.4N for lithium ion **batteries**)
IT Secondary **batteries**
(lithium; composite anodes based on nano-oxides and Li2.6Co0.4N for lithium ion **batteries**)
IT 1332-29-2, Tin oxide **107875-69-4**, Silicon oxide (SiO1.1)
174421-80-8, Cobalt lithium nitride (Co0.4Li2.6N)
(composite anodes based on nano-oxides and Li2.6Co0.4N for lithium ion **batteries**)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:122710 HCAPLUS Full-text
DOCUMENT NUMBER: 132:271133
TITLE: Relaxation of photodarkening in SiO-As2(S,Se)3 composite layers
AUTHOR(S): Indutnyi, I. Z.; Shepeliavyi, P. E.; Indutnyi, V. I.
CORPORATE SOURCE: Institute of Semiconductor Physics of NASU, Kiev, 252028, Ukraine
SOURCE: Fizika Napivprovidnikiv, Kvantova ta Optoelektronika (**1999**), 2(2), 59-63
CODEN: FNKOF7; ISSN: 1560-8034
PUBLISHER: Natsional'na Akademiya Nauk Ukraini, Institut Fiziki Napivprovidnikiv
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 23 Feb 2000
AB Investigated in this work is the reversible photostimulated red absorption edge shift (photodarkening), ΔEg, of As2(S,Se)3 nanoparticles embedded into the SiO matrix. As compared to continuous chalcogenide films, the remarkable ΔEg increase (up to 4 times) with decreasing of chalcogenide **particle sizes** in composite SiO-As2(S,Se)3 layers was revealed. The exponential dependence of ΔEg on storing time at different temps. has been obtained. An activation energy of the transition of As2S3 nanoparticles structure from a metastable photoexposed state to a ground annealed state is equal to 0.78 ± 0.06 eV. The effects are related to a spatial confinement of a photoexcited carrier diffusion length and an influence of **particle sizes** on intermediate-range order scale structure relaxation in the chalcogenide nanoparticles.
IT **113443-18-8**, Silicon oxide (SiO)
(matrix; relaxation of photodarkening in SiO-As2(S,Se)3 composite layers)
RN 113443-18-8 HCAPLUS
CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number

O	1	17778-80-2
Si	1	7440-21-3

CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 66, 74

IT **Particle size**
(effect on relaxation of photodarkening in SiO-As2(S,Se)3 composite layers)

IT **Composites**
Electron transfer
Nanoparticles
Photochemistry
UV and visible spectra
(relaxation of photodarkening in SiO-As2(S,Se)3 composite layers)

IT **113443-18-8**, Silicon oxide (SiO)
(matrix; relaxation of photodarkening in SiO-As2(S,Se)3 composite layers)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 10 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:118321 HCAPLUS Full-text
DOCUMENT NUMBER: 132:282873
TITLE: The nucleation and growth mechanisms of Si-N-O fibers
AUTHOR(S): Ewing, H.; Vital, A.; Vogt, U.; Hendry, A.
CORPORATE SOURCE: Swiss Federal Laboratories for Materials Testing and Research, Dubendorf, Switz.
SOURCE: Materials Science Forum (2000), 325-326(Nitrides and Oxynitrides), 37-42
CODEN: MSFOEP; ISSN: 0255-5476
PUBLISHER: Trans Tech Publications Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 20 Feb 2000

AB **Amorphous** Si oxynitride fibers (Si-N-O) were grown in a horizontal tube furnace on a SiC substrate at 1450° by exposing a stoichiometric precursor **powder** mixture of SiO2 + SiC with 10%Ti to flowing NH3(g) for 4 h. The reaction occurs via a 2 stage reaction sequence involving the formation of SiO(g) and subsequent nitridation performed by NHx ($1 \leq x \leq 3$) species. Nucleation probably occurs as the result of the reaction between adsorbed NHx species and SiO(g) produced by the reaction of SiO2 and SiC. The residence time of the reactants is increased owing to the high surface activity of the NHx species and the geometry of the **powder** bed. Longitudinal fiber growth is believed to take place at the fiber terminus via a vapor solid mechanism. The maximum fiber length is dictated by furnace **dimensions**. Radial growth probably is occurring by means of a CVD process.

IT **113443-18-8**, Silicon oxide (SiO)
(nucleation and growth mechanisms of SiO fibers)

RN 113443-18-8 HCAPLUS
CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

CC 57-2 (Ceramics)
Section cross-reference(s): 66, 75
ST nucleation growth **amorphous** silicon oxynitride fiber furnace stoichiometry; silicon carbide substrate silica titanium ammonia gas oxynitride fiber; nitridation adsorbed specie residence time oxynitride fiber; chem vapor deposition silicon oxynitride fiber
IT Adsorbed substances
Composition
Crystallization
Furnaces
Nitriding
Nucleation
Residence time
Stoichiometry
Surface activity
Vapors
(nucleation and growth mechanisms of SiO fibers)
IT **113443-18-8**, Silicon oxide (SiO)
(nucleation and growth mechanisms of SiO fibers)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:684088 HCAPLUS Full-text
DOCUMENT NUMBER: 132:42137
TITLE: Gas phase and particle diagnostic of HMDSO plasmas by infrared absorption spectroscopy
AUTHOR(S): Courteille, C.; Magni, D.; Deschenaux, C.; Howling, A. A.; Hollenstein, C.; Fayet, P.
CORPORATE SOURCE: Centre de Recherches en Physique des Plasmas, Ecole Polytechnique Federale de Lausanne, Lausanne, Switz.
SOURCE: Annual Technical Conference Proceedings - Society of Vacuum Coaters (**1998**), 41st, 327-332
CODEN: ATCCDI; ISSN: 0731-1699
PUBLISHER: Society of Vacuum Coaters
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 28 Oct 1999
AB FTIR spectroscopy was applied to a radiofrequency discharge in hexamethyldisiloxane (HMDSO) diluted with oxygen and helium as typically used for industrial SiOx deposition. By measuring the IR absorption of the HMDSO mol. the gas consumption during processing can be monitored allowing process optimization. Addnl. information on various IR active radicals formed within the plasma, such as CO, CO2 and aldehydes, helps to elucidate the still unknown plasma chemical in HMDSO plasmas. Besides information on gaseous components in the plasma, IR transmission spectra give at the same time important data on the nature of the **particle** contamination, which is a known problem in these plasmas. The **particle compn** . can be determined by fitting the observed characteristic IR absorption lines from optical consts. of appropriate **particle** materials. Also, in combination with the Mie scattering component of the IR beam in the spectra, the **particle size** and **particle** number d. can be determined The obtained results for the **particle size** and **composition** are confirmed by ex-situ electron microscopy studies and EELS. The shape of the absorption lines allows us to draw some indications on the state of agglomeration of the **particles**.
IT **113443-18-8**, Silicon oxide (SiO)
(particles formed in hexamethyldisiloxane/oxygen/helium plasma)
RN 113443-18-8 HCAPLUS

CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

CC 73-3 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 75, 76
IT Light scattering
Nanoparticles
Particle size
(IR Mie scattering of **particles** formed in hexamethyldisiloxane/oxygen/helium plasma)
IT 114823-39-1, Silicon oxide (SiO0.9) 126414-42-4, Silicon oxide (SiO0.4)
(**amorphous** particles formed in hexamethyldisiloxane/oxygen/helium plasma)
IT 7631-86-9, Silica, properties **113443-18-8**, Silicon oxide (SiO)
(particles formed in hexamethyldisiloxane/oxygen/helium plasma)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:125234 HCAPLUS Full-text
DOCUMENT NUMBER: 130:303497
TITLE: Strong visible photoluminescence in **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder
AUTHOR(S): Rinnert, H.; Vergnat, M.; Marchal, G.; Burneau, A.
CORPORATE SOURCE: (U.M.R. au C.N.R.S. No. 7556), Laboratoire de Physique des Materiaux, B.P. 239, Universite Henri Poincare Nancy 1, Vandoeuvre-les-Nancy, 54506, Fr.
SOURCE: Journal of Luminescence (1999), Volume Date 1998, 80(1-4), 445-448
CODEN: JLUMA8; ISSN: 0022-2313
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 25 Feb 1999
AB **Amorphous** SiOx and SiOx : H films were prepared by thermal evaporation of SiO powder in ultrahigh vacuum or under a flow of hydrogen ions onto Si substrates maintained at 100°. Photoluminescence (PL) can be seen in the visible range with the naked eye on the as-deposited samples without post-treatments. **Composition** and structure studies were performed by IR and Raman spectrometry expts. on films annealed at different temps. H and O bonding was studied by IR spectrometry. The PL is attributed to the quantum confinement of excitons in a-Si clusters embedded in the a-SiOx matrix. The authors' results demonstrate that O creates an efficient potential barrier and no further passivation by H is necessary.
IT **113443-18-8**, Silicon monoxide
(strong visible photoluminescence in **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder)
RN 113443-18-8 HCAPLUS
CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST visible luminescence **amorphous** silicon oxide hydrogenated; thin film thermal evapn oxide powder
IT Annealing
Exciton
IR spectra
Luminescence
Quantum **size** effect
Raman spectra
(strong visible photoluminescence and spectral properties of **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO **powder**)
IT Passivation
(strong visible photoluminescence in **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder and effect of hydrogen passivation)
IT Evaporation
(thermal; strong visible photoluminescence and spectral properties of **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder)
IT 17778-80-2, Oxygen(atomic), uses
(barrier created by; strong visible photoluminescence in **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder in relation to)
IT 1333-74-0, Hydrogen, uses
(passivation by; strong visible photoluminescence in **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder and effect of hydrogen passivation)
IT 12385-13-6, Hydrogen(atomic), occurrence
(strong visible photoluminescence in **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder)
IT 7631-86-9DP, Silicon dioxide, non-stoichiometric
(strong visible photoluminescence in **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder)
IT **113443-18-8**, Silicon monoxide
(strong visible photoluminescence in **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder)
IT 1333-74-0D, Hydrogen, ions, uses
(strong visible photoluminescence in **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder under flow of hydrogen ions)
IT 7631-86-9, Silicon dioxide, uses
(substrate; strong visible photoluminescence in **amorphous** SiOx and SiOx:H thin films prepared by thermal evaporation of SiO powder)
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 13 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:194976 HCAPLUS Full-text
DOCUMENT NUMBER: 128:233849
TITLE: Vaporization-source method for reactive deposition of nanocrystalline materials and multiphase

composites
INVENTOR(S): Eastman, Jeffrey A.; Rittner, Mindy N.; Youngdahl, Carl J.; Weertman, Julia R.
PATENT ASSIGNEE(S): United States Dept. of Energy, USA
SOURCE: U.S., 9 pp., Cont. of U. S. Ser. No. 402,999, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5728195	A	19980317	US 1997-801672 <--	19970218
PRIORITY APPLN. INFO.:			US 1995-402999 <--	B1 19950310

ED Entered STN: 03 Apr 1998
AB The multi-component nanocryst. and nanophase materials are deposited by: (a) simultaneously vaporizing by electron-beam heating of Ti, Fe, Co, Ni, Cu, Zr, Pd, Ag, Pt, Au, Zn, W, Mo, Cr, Mg, Mn, Ir, Nb, Al, Si, and/or Ge under inert atmospheric; (b) reacting the mixed vapors in a controlled atmospheric containing suitable reactive gases; (c) condensing the mixed reaction products and residual metals to form nanocryst. **powders**; and (d) compressing (or hot-press bonding) the **powder** mixture to form a dense nanocryst. metal, alloy, composite, or ceramic. The resulting multicomponent and multiphase materials typically have the **grain size** of 1-100 nm. The process was applied to vaporize Cu and Si in He-O2 gas mixture controlled for the oxidation of Si, resulting in the nanoscale Cu-SiOx composite with higher content of Si oxide than .apprx.15 weight% obtained conventionally by internal oxidation
IT **113443-18-8**, Silicon oxide (SiO)
(composites with, nanoscale; vaporization with reactive deposition of nanoscale powders or multiphase composites)
RN 113443-18-8 HCAPLUS
CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

IC ICM B22F001-00
ICS B22F009-00
INCL 075351000
CC 56-4 (Nonferrous Metals and Alloys)
Section cross-reference(s): 57
IT **Composites**
Powders
(nanoscale; vaporization from multiple sources for reactive deposition of nanoscale powders or multiphase composites)
IT 1308-38-9, Chromium oxide (Cr2O3), uses 1309-37-1, Iron oxide (Fe2O3), uses 1309-48-4, Magnesia, uses 1313-99-1, Nickel oxide (NiO), uses 1314-13-2, Zinc oxide (ZnO), uses 1314-23-4, Zirconia, uses 1314-36-9, Yttria, uses 1317-61-9, Iron oxide (Fe3O4), uses 1344-28-1, Alumina, uses 1345-25-1, Iron oxide (FeO), uses 7631-86-9, Silica, uses 12018-00-7, Chromium oxide (CrO) 13463-67-7, Titania, uses **113443-18-8**, Silicon oxide (SiO)
(composites with, nanoscale; vaporization with reactive deposition

of nanoscale powders or multiphase composites)
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 14 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:51661 HCAPLUS Full-text
DOCUMENT NUMBER: 124:127934
TITLE: Brewster angle technique to study metal nanoparticle distributions in dielectric matrixes
AUTHOR(S): Tognini, P.; Geddo, M.; Stella, A.; Cheyssac, P.; Kofman, R.
CORPORATE SOURCE: Dip. Fis. "A. Volta", Univ. degli Studi di Pavia, Pavia, 27100, Italy
SOURCE: Journal of Applied Physics (1996), 79(2), 1032-9
CODEN: JAPIAU; ISSN: 0021-8979
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 25 Jan 1996
AB The authors report exptl. results obtained by the Brewster angle technique on samples constituted by Pb and Sn nanoparticles embedded in an **amorphous** SiO matrix. The extended comparison with different effective medium models gives clear indications on (i) the structural **composition** of the samples and (ii) the spatial distribution of the metallic **particles** in these systems, pointing to a quasi-two-**dimensional** arrangement.
IT **113443-18-8**, Silicon oxide (SiO)
(Brewster angle determination of lead and tin nanoparticle distributions in **amorphous** silicon monoxide matrix)
RN 113443-18-8 HCAPLUS
CN Silicon oxide (SiO) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1	17778-80-2
Si	1	7440-21-3

CC 66-5 (Surface Chemistry and Colloids)
Section cross-reference(s): 56, 57, 73
IT Distribution function
Infrared spectrometry
(Brewster angle determination of lead and tin nanoparticle distributions in **amorphous** silicon monoxide matrix)
IT Particles
(nano-, Brewster angle determination of lead and tin nanoparticle distributions in **amorphous** silicon monoxide matrix)
IT 7439-92-1, Lead, properties 7440-31-5, Tin, properties
(Brewster angle determination of lead and tin nanoparticle distributions in **amorphous** silicon monoxide matrix)
IT **113443-18-8**, Silicon oxide (SiO)
(Brewster angle determination of lead and tin nanoparticle distributions in **amorphous** silicon monoxide matrix)

L88 ANSWER 15 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1993:433058 HCAPLUS Full-text
DOCUMENT NUMBER: 119:33058
TITLE: High-performance multilayer capacitor dielectrics from chemically prepared powders

AUTHOR(S): Bruno, Salvatore A.; Swanson, Donald K.; Burn, Ian
CORPORATE SOURCE: Jackson Lab., Du Pont Chem., Deepwater, NJ, 08023, USA
SOURCE: Journal of the American Ceramic Society (**1993**), 76(5), 1233-41
CODEN: JACTAW; ISSN: 0002-7820
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 24 Jul 1993
AB Advantages of chemical prepared **powders** for electronic ceramics have been demonstrated for a number of multilayer capacitor (MLC) dielecs. A cost-efficient precipitation process is presented to prepare undoped or doped crystalline barium titanate **powder** with a narrow **particle size** distribution close to 0.5 μm. More complex **compns.**, e.g., barium neodymium titanate, were **amorphous** as precipitated but could be crystallized by calcination at <1000°. Addnl. **compositional** modifications, to adjust elec. properties or to lower sintering temperature, were accomplished by doping the surface of the **powder particles** using a solution coating process. Exceptional fired densities and elec. performance were obtained.
IT **11126-22-0P**, Silicon oxide
(dopants, dielec. powder coated with, preparation of, for high-performance multilayer capacitors)
RN 11126-22-0 HCAPLUS
CN Silicon oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Si	x	7440-21-3

CC 57-2 (Ceramics)
Section cross-reference(s): 76
IT 11099-02-8P, Nickel oxide **11126-22-0P**, Silicon oxide
11129-60-5P, Manganese oxide 12627-00-8P, Niobium oxide
12648-30-5P, Neodymium oxide
(dopants, dielec. powder coated with, preparation of, for high-performance multilayer capacitors)

L88 ANSWER 16 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1972:532610 HCAPLUS Full-text
DOCUMENT NUMBER: 77:132610
ORIGINAL REFERENCE NO.: 77:21797a,21800a
TITLE: Optical and bonding model for noncrystalline SiOx and SiOxNy materials
AUTHOR(S): Philipp, Herbert R.
CORPORATE SOURCE: Gen. Electr. Corp. Res. Dev., Schenectady, NY, USA
SOURCE: Journal of Non-Crystalline Solids (**1972**), 8-10, 627-32
CODEN: JNCSBJ; ISSN: 0022-3093
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 12 May 1984
AB Optical data for noncryst. SiOx materials are presented and analyzed for the energy region 1-26 eV. **Amorphous** substances of all intermediate **compns.** between Si and SiO2 can be formed, and these materials are not simple mixts. of **particles** of Si and SiO2, but rather the 2-atom species are blended on an atomic scale. The basic units of this structure are Si tetrahedra (perhaps highly distorted) of the type Si-(SiyO4-y) in which the distribution of atoms for all y = 0-4 is statistical for any given atom ratio. The optical

properties of these layers are determined by the presence and grouping of Si-Si and Si-O bonds; clusters of like bonds of the **dimension** of a Si-(Si4) or Si-(O4) tetrahedron have optical properties comparable to those exhibited by **amorphous** Si or quartz, resp., "in bulk."

IT **11126-22-0**
(optical properties of, bonding model in relation to)

RN 11126-22-0 HCAPLUS

CN Silicon oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Si	x	7440-21-3

CC 73-2 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)

ST optical property silicon oxide; bonding silicon oxide; **amorphous** silicon oxide bonding

IT 11105-01-4 **11126-22-0**
(optical properties of, bonding model in relation to)

```
=> d que l89
L1             1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  US20040106040/PN
L3             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  7440-21-3/RN
L4          5231 SEA FILE=REGISTRY ABB=ON  PLU=ON  (SI(L)O)/ELS(L)2-3/ELC.SU
                 B
L5          5231 SEA FILE=REGISTRY ABB=ON  PLU=ON  L4 AND L4
L7        274031 SEA FILE=REGISTRY ABB=ON  PLU=ON  (SI(L)O(L)C)/ELS(L)4/ELC.
                 SUB
L9          1776 SEA FILE=REGISTRY ABB=ON  PLU=ON  L5 NOT 1.7-100/O
L10         1095 SEA FILE=REGISTRY ABB=ON  PLU=ON  L9 NOT 0-0.9999/O
L11          466 SEA FILE=REGISTRY ABB=ON  PLU=ON  L10 AND TIS/CI
L12          334 SEA FILE=REGISTRY ABB=ON  PLU=ON  L11 NOT 1-100/M
L13           97 SEA FILE=REGISTRY ABB=ON  PLU=ON  L12 AND 2/ELC.SUB
L14       247430 SEA FILE=REGISTRY ABB=ON  PLU=ON  L7 NOT PMS/CI
L15        46678 SEA FILE=REGISTRY ABB=ON  PLU=ON  L14 NOT 1-100/NR
L16              QUE  ABB=ON  PLU=ON  PARTICL? OR MICROPARTICL? OR PARTICU
                 LAT? OR DUST? OR GRIT? OR GRAIN# OR GRANUL? OR POWDER? OR
                  SOOT? OR SMUT? OR FINES# OR PRILL? OR FLAKE# OR PELLET
L17              QUE  ABB=ON  PLU=ON  MU OR M(A)U OR MICRON OR MICROMETER
                  OR MICRO(W)METER OR NANOMETER OR NANO(W)METER OR  NM OR
                 N(A)M OR MM OR M(A)M
L18              QUE  ABB=ON  PLU=ON  BATTERY OR BATTERIES
L19       483078 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3
L20         7485 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L13
L23              QUE  ABB=ON  PLU=ON  NEGATIVE? ELECTROD# OR ANOD## OR NEG
                 ?(A)ELECTROD#
L24         2249 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L23(L)L19
L25          151 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20(L)L23
L26       641795 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16(L)(SIZE# OR DIAMETER?
                 DIAMETRE? OR RADIUS OR RADII OR DIMENSION? OR WIDTH? OR
                 WIDENESS?)
L27       438763 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L16(2A)(SIZE# OR DIAMETER?
                  DIAMETRE? OR RADIUS OR RADII OR DIMENSION? OR WIDTH? OR
                 WIDENESS?)
L28           77 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L24 AND L27
L30           62 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L28 AND L17
L31        19057 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "BATTERY ANODES"+PFT,NT/CT

L32           51 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30 AND L31
L34       388495 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "COATING MATERIALS"+PFT,NT
                 /CT
L35           19 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L24 AND L31 AND L34
L40              QUE  ABB=ON  PLU=ON  (NONAQUEOUS OR NONAQ# OR NON(A)(AQ#
                 OR AQUEOUS?))(2A)ELECTROLYT?
L41           10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND L40
L42            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND L40
L43           15 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 OR L42
L44           65 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25 AND L40
L45            2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L44 AND  L26
L46          246 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 AND L26
L47            3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L40
L48          163 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L17
L49            4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L48 AND L23
L50            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L45 OR L47 OR L49
L51            3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L40
L52            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31 AND L46
L53            7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L50 OR L51 OR L52)
L54           49 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND AMORPH?
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L57           8 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L18
L58      144234 SEA FILE=HCAPLUS ABB=ON  PLU=ON  COMPOSITES+PFT,NT/CT
L59           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L58
L60           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L54 AND (L58 OR COMPOSIT?)

L61          24 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L57 OR L59 OR L60
L62          25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L53 OR L61
L63       91757 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15
L64       91757 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L15
L65        4958 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L64 AND (L19 OR L20)
L67           7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L65 AND (LI OR LITHIUM)(2A
                )ION?
L68          35 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L65 AND (L18 OR L31)
L69           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 AND SURFACE TREAT?
L70           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 AND SURFACE(2A)TREAT?

L71           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 AND L40
L72          11 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L67 OR (L69 OR L70 OR
                L71)
L74       30700 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "DISPERSION (OF MATERIALS)
                "+PFT,NT/CT
L75           0 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62 AND L74
L76          25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62 OR L75
L77         126 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L63 AND (LI OR LITHIUM)(2A
                )ION#
L78          12 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 AND L40
L79           6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 AND ANOD##(2A)ACTIV?
L80           7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L77 AND (CONDUCT?(A)COAT?
                OR L34)
L81          29 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L72 OR (L78 OR L79 OR
                L80)
L82          10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L81 AND COAT?
L83           8 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L43 AND (1840-2003)/PRY,AY
                ,PY
L84          16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L76 AND (1840-2003)/PRY,AY
                ,PY
L85          10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L82 AND (1840-2003)/PRY,AY
                ,PY
L86           1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L1 AND (L83 OR L84 OR
                L85)
L89           9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L85 NOT L86


=> d l89 1-9 ibib ed abs hitstr hitind

L89  ANSWER 1 OF 9  HCAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2005:371541  HCAPLUS  Full-text
DOCUMENT NUMBER:          142:414575
TITLE:                    Ceramic separator for electrochemical cells with
                          improved conductivity
INVENTOR(S):              Hennige, Volker; Hying, Christian; Hoerpel,
                          Gerhard
PATENT ASSIGNEE(S):       Degussa Ag, Germany
SOURCE:                   PCT Int. Appl., 40 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 German
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:
```

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005038946	A2	20050428	WO 2004-EP51844 <--	20040819
WO 2005038946	A3	20060216		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10347566	A1	20050512	DE 2003-10347566 <--	20031014
EP 1673822	A2	20060628	EP 2004-766544 <--	20040819
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
CN 1868077	A	20061122	CN 2004-80030168 <--	20040819
JP 2007508670	T	20070405	JP 2006-534732 <--	20040819
KR 2007019952	A	20070216	KR 2006-707115 <--	20060413
PRIORITY APPLN. INFO.:			DE 2003-10347566 A <--	20031014
			WO 2004-EP51844 W	20040819

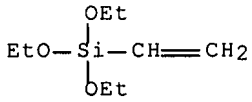
ED Entered STN: 29 Apr 2005

AB Disclosed is a separator for an electrochem. cell, comprising a flexible, broken support with a ceramic **coating** which is provided in the support and contains 75 to 99 ppm of oxide particles, selected among ZrO2, SiO2, and Al2O3 particles, and 1 to 25 ppm of zeolite particles. The inventive separators have a significantly improved ion conductivity after being filled with an electrolyte and are to be used especially as separators in **lithium-ion** batteries.

IT **78-08-0**, Vinyltriethoxysilane **78-10-4**, Tetraethoxysilane **1067-53-4**, Vinyltris(2-methoxyethoxy)silane **2031-67-6**, Methyltriethoxysilane **2530-85-0 2768-02-7**, Vinyltrimethoxysilane
(ceramic separator for electrochem. cells with improved conductivity)

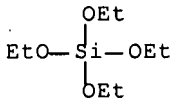
RN 78-08-0 HCAPLUS

CN Silane, ethenyltriethoxy- (CA INDEX NAME)

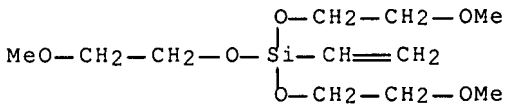


RN 78-10-4 HCAPLUS

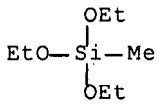
CN Silicic acid (H4SiO4), tetraethyl ester (CA INDEX NAME)



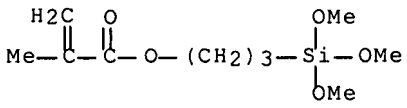
RN 1067-53-4 HCAPLUS
CN 2,5,7,10-Tetraoxa-6-silaundecane, 6-ethenyl-6-(2-methoxyethoxy)- (CA INDEX NAME)



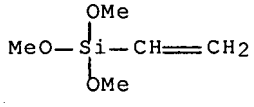
RN 2031-67-6 HCAPLUS
CN Silane, triethoxymethyl- (CA INDEX NAME)



RN 2530-85-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester (CA INDEX NAME)



RN 2768-02-7 HCAPLUS
CN Silane, ethenyltrimethoxy- (CA INDEX NAME)

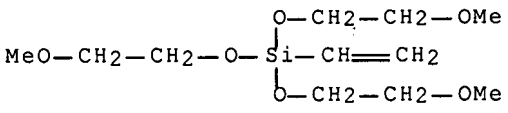


IC ICM H01M
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 57
IT Adhesives
Bubble point
Ceramic coatings
Secondary battery separators
(ceramic separator for electrochem. cells with improved conductivity)
IT **78-08-0**, Vinyltriethoxysilane **78-10-4**, Tetraethoxysilane 919-30-2, 3-Aminopropyltriethoxysilane **1067-53-4**, Vinyltris(2-methoxyethoxy)silane 1760-24-3, n-2-Aminoethyl-3-aminopropyltrimethoxysilane **2031-67-6**, Methyltriethoxysilane 2530-83-8, (3-Glycidyloxypropyl)trimethoxysilane **2530-85-0 2768-02-7**, Vinyltrimethoxysilane
(ceramic separator for electrochem. cells with improved conductivity)

L89 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:204072 HCAPLUS Full-text
DOCUMENT NUMBER: 142:414422
TITLE: Preparation of electrodes for **lithium-ion** batteries
INVENTOR(S): Zhou, Henghui; Chen, Jitao; Sun, Jie
PATENT ASSIGNEE(S): Advanced Science and Technology Enterprises Co., Ltd., Beijing University, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 12 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1485940	A	20040331	CN 2003-153874 <--	20030826
PRIORITY APPLN. INFO.:			CN 2003-153874 <--	20030826

ED Entered STN: 08 Mar 2005
AB The electrodes are prepared by mixing active substances 85-98, conducting agents 0.5-10 and water-based adhesive 1.5-10%, adding H2O to form slurry, **coating** the slurry on both sides of anode assembly with Al foil, or cathode assembly with Cu foil, and rolling to form a sheet. The water-based adhesive is prepared by mixing thickening agents (CMC, EMC, HPMC Li salt or Na salt), tackifiers and additives (vinyl-tri(β-methoxyethoxy)silane, γ-aminopropyltriethoxy silane or N-dimethylamino-trimethoxy silane). The **anode active** substances are Li-containing transition metal oxides or phosphate salts. The cathode active substances are modified graphite or MCMB. The conductive agents are graphite or C black, or a mixture of both.
IT **1067-53-4**, Vinyl-tri(β-methoxyethoxy)silane
(adhesive containing; preparation of electrodes for **lithium-ion** batteries with)
RN 1067-53-4 HCAPLUS
CN 2,5,7,10-Tetraoxa-6-silaundecane, 6-ethenyl-6-(2-methoxyethoxy)- (CA INDEX NAME)



IC ICM H01M004-02
ICS H01M004-62; H01M004-48; H01M004-58; H01M004-04; H01M010-38; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **lithium ion** battery electrode adhesive
IT Carbon black, uses
(in preparation of **lithium-ion** batteries)
IT Secondary batteries
(lithium; preparation of electrodes for **lithium-ion** batteries)
IT Battery electrodes
(preparation of electrodes for **lithium-ion** batteries)
IT Adhesives
(water-thinned; in preparation of electrodes for **lithium-ion** batteries)
IT 919-30-2, γ-Aminopropyltriethoxy silane **1067-53-4**, Vinyl-tri(β-methoxyethoxy)silane 116228-47-8
(adhesive containing; preparation of electrodes for **lithium-ion** batteries with)
IT 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses
(in preparation of electrodes for **lithium-ion** batteries)
IT 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses
(in preparation of **lithium-ion** batteries)

L89 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:198217 HCAPLUS Full-text
DOCUMENT NUMBER: 140:220730
TITLE: Method of fabrication of ion-conductive battery separator for lithium batteries.
INVENTOR(S): Hennige, Volker; Hying, Christian; Hoerpel, Gerhard
PATENT ASSIGNEE(S): Creavis Gesellschaft fuer Technologie und Innovation m.b.H., Germany
SOURCE: Ger. Offen., 19 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10240032	A1	20040311	DE 2002-10240032 <--	20020827
CA 2496841	A1	20040311	CA 2003-2496841 <--	20030721
WO 2004021477	A1	20040311	WO 2003-EP7933 <--	20030721

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,

CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,
SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG

AU 2003250125	A1	20040319	AU 2003-250125 <--		20030721
EP 1532701	A1	20050525	EP 2003-790805. <--		20030721
EP 1532701	B1	20060104			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK					
CN 1679185	A	20051005	CN 2003-820566 <--		20030721
JP 2005536860	T	20051202	JP 2004-531810 <--		20030721
AT 315277	T	20060215	AT 2003-790805 <--		20030721
US 2006166085	A1	20060727	US 2004-519097 <--		20041227
IN 2004CN03105	A	20060217	IN 2004-CN3105 <--		20041231
PRIORITY APPLN. INFO.:			DE 2002-10240032 <--	A	20020827
			WO 2003-EP7933 <--	W	20030721

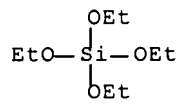
ED Entered STN: 11 Mar 2004

AB The invention concerns separators for lithium batteries as well as a procedure for their production and use. The separator is based on a laminar, flexible substrate with a plurality of openings. The substrate has a porous, inorg., elec. insulating **coating**, which closes the openings in the substrate. The material of the substrate is selected from woven or nonwoven, elec. nonconductive polymer fibers and the inorg. elec. **conductive coating** contains metallic oxide particle. The separator has **Li-ion** conducting characteristics without the presence electrolytes. After loading with addnl. **Li- ion** conductive electrolytes, a clearly higher ionic conduction is observed than in the case of conventional combinations of **lithium ion** conductive separators and electrolyte. The separators according to invention are especially suitable for application in lithium heavy-duty batteries.

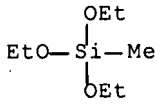
IT **78-10-4**, Tetraethoxysilane **2031-67-6**, Methyltriethoxysilane **2768-02-7**, Dynasylan Silfin
(method of fabrication of ion-conductive battery separator for lithium batteries.)

RN 78-10-4 HCAPLUS

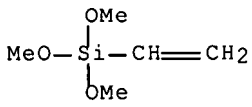
CN Silicic acid (H4SiO4), tetraethyl ester (CA INDEX NAME)



RN 2031-67-6 HCAPLUS
CN Silane, triethoxymethyl- (CA INDEX NAME)



RN 2768-02-7 HCAPLUS
CN Silane, ethenyltrimethoxy- (CA INDEX NAME)



IC ICM H01M002-14
ICS H01M010-38
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Coating materials**
Electric insulators
Secondary battery separators
(method of fabrication of ion-conductive battery separator for lithium batteries.)
IT **78-10-4**, Tetraethoxysilane **2031-67-6**, Methyltriethoxysilane 2530-83-8, Dynasylan GLYMO **2768-02-7**, Dynasylan Silfin
(method of fabrication of ion-conductive battery separator for lithium batteries.)
IT 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses
(particles, **coating**; method of fabrication of ion-conductive battery separator for lithium batteries.)

L89 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:177932 HCAPLUS Full-text
DOCUMENT NUMBER: 140:202443
TITLE: Procedure for the production of a separator, in particular for **lithium ion** batteries
INVENTOR(S): Hennige, Volker; Hying, Christian; Hoerpel, Gerhard
PATENT ASSIGNEE(S): Creavis Gesellschaft fuer Technologie Und Innovation m.b.H., Germany
SOURCE: Ger. Offen., 15 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10238940	A1	20040304	DE 2002-10238940 <--	20020824
WO 2004021474	A1	20040311	WO 2003-EP7155 <--	20030704

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003249954	A1	20040319	AU 2003-249954 <--	20030704

PRIORITY APPLN. INFO.:	DE 2002-10238940 <--	A	20020824
	WO 2003-EP7155 <--	W	20030704

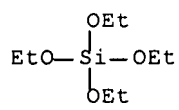
ED Entered STN: 04 Mar 2004

AB The invention concerns a procedure for the production of separators, especially elec. separators, as well as separators. Elec. separator is used in batteries and other devices, in which electrodes (under maintenance of ionic conductivity) are separated from each other. The separator is preferably a thin, porous, insulating material with high ion permeability, good mech. firmness and long-term stability towards, e.g., in the chems. and solvent of the electrolyte used. It is to isolate elec. completely the cathode in batteries from the anode. In addition, it must be permanently flexible and follow the movements in the system, e.g. in the electrode package when charging and discharging. This task is solved by the procedure according to invention, with a substrate provided with a porous ceramic **coating**, whereby the **coating** process is so controlled that the substrate is led with a maximum strain in longitudinal direction of 10 N/cm. By this measure the **coating** attains a definitely higher durability than the conventional separators, since a deformation, especially elastic or plastic deformation, and a shrinkage of the substrate material are avoided as far as possible.

IT **78-10-4**, Teos **2031-67-6**, Methyl triethoxy silane
(procedure for production of separator especially for **lithium ion** batteries)

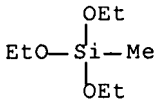
RN 78-10-4 HCAPLUS

CN Silicic acid (H4SiO4), tetraethyl ester (CA INDEX NAME)



RN 2031-67-6 HCAPLUS

CN Silane, triethoxymethyl- (CA INDEX NAME)



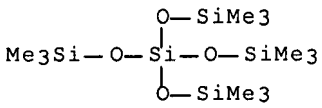
IC ICM H01M002-14
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 47
IT Secondary batteries
(lithium; procedure for production of separator especially for **lithium ion** batteries)
IT **Ceramic coatings**
Secondary battery separators
Separators
(procedure for production of separator especially for **lithium ion** batteries)
IT Acrylic fibers, uses
Polyester fibers, uses
Polyolefin fibers
Synthetic polymeric fibers, uses
(procedure for production of separator especially for **lithium ion** batteries)
IT **78-10-4**, Teos **2031-67-6**, Methyl triethoxy silane
2530-83-8, Dynasylan GLYMO
(procedure for production of separator especially for **lithium ion** batteries)
IT 1314-23-4, Zirconium oxide, uses 1344-28-1, Alumina, uses
7631-86-9, Silica, uses
(procedure for production of separator especially for **lithium ion** batteries)

L89 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:736751 HCAPLUS Full-text
DOCUMENT NUMBER: 137:265677
TITLE: Method for fabrication of rechargeable **lithium-ion** battery cells
INVENTOR(S): Zhang, Zhiwei; Park, Chi-Kyun; Sun, Lu Ying; Chai, Chul
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 5 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002136957	A1	20020926	US 2001-766672 <--	20010123
US 6547839	B2	20030415		
KR 2002062684	A	20020729	KR 2002-420 <--	20020104

PRIORITY APPLN. INFO.: US 2001-766672 A 20010123 <--

ED Entered STN: 27 Sep 2002
AB **Lithium-ion** electrochem. cells include an anode, a cathode and a separator between the anode and cathode, wherein at least one of the anode, cathode and separator includes a polysiloxane **coating** thereon. Most preferably, the polysiloxane **coating** is the polymerized reaction product of di-Me siloxane and tetra(trimethylsiloxy)silane, and is present on the surface in an amount between about 0.05 to about 0.17 mg/cm2. After being **coated** with the polysiloxane adhesive, the electrodes and separator can easily be attached one to another at ambient temperature by application of pressure using a hand roller or with a laminator, and then subsequently formed into a spiral or stacked structure for placement in a battery cell case.
IT **3555-47-3**, Tetrakis(trimethylsiloxy)silane
(adhesive; method for fabrication of rechargeable **lithium -ion** battery cells)
RN 3555-47-3 HCAPLUS
CN Trisiloxane, 1,1,1,5,5,5-hexamethyl-3,3-bis[(trimethylsilyl)oxy]- (CA INDEX NAME)



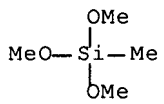
IC ICM H01M002-16
ICS H01M002-08
INCL 429246000; X42-914.4; X42-918.5; X2-962.35
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT Polysiloxanes, uses
(adhesive; method for fabrication of rechargeable **lithium -ion** battery cells)
IT Secondary batteries
(lithium; method for fabrication of rechargeable **lithium-ion** battery cells)
IT **Coating materials**
(method for fabrication of rechargeable **lithium-ion** battery cells)
IT Adhesives
(polysiloxane, **coating**; method for fabrication of rechargeable **lithium-ion** battery cells)
IT Battery anodes
Battery cathodes
Secondary battery separators
(polysiloxane-**coated**; method for fabrication of rechargeable **lithium-ion** battery cells)
IT **Coating** process
(spray; method for fabrication of rechargeable **lithium-ion** battery cells)
IT **3555-47-3**, Tetrakis(trimethylsiloxy)silane 9016-00-6, Dimethylsiloxane
(adhesive; method for fabrication of rechargeable **lithium -ion** battery cells)
IT 9003-07-0, Polypropylene
(separator; method for fabrication of rechargeable **lithium -ion** battery cells)
IT 67-64-1, Acetone, uses 78-93-3, Butanone, uses 108-88-3, Toluene,

uses 109-99-9, Thf, uses 123-91-1, Dioxane, uses 1330-20-7, Xylene, uses
(solvent; method for fabrication of rechargeable **lithium-ion** battery cells)

L89 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:89087 HCAPLUS Full-text
DOCUMENT NUMBER: 134:268680
TITLE: Si-O network encapsulated graphite-silicon mixtures as negative electrodes for **lithium-ion** batteries
AUTHOR(S): Ng, S. B.; Lee, J. Y.; Liu, Z. L.
CORPORATE SOURCE: Department of Chemical and Environmental Engineering, National University of Singapore, Singapore, 119260, Singapore
SOURCE: Journal of Power Sources (**2001**), 94(1), 63-67
CODEN: JPSODZ; ISSN: 0378-7753
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 07 Feb 2001
AB Graphite-silicon mixts. are encapsulated in a Si-O network derived from sol-gel transformation of alkoxy-silane(methyltrimethoxysilane). The composites are characterized by powder X-ray diffraction and SEM. The catalyst used in the sol-gel process significantly affects the electrochem. properties of the composites. The initial specific capacity of the composites is close to 500 mA h g-1, which is between that of graphite alone (.apprx.300 mA h g-1) and mech. mixts. of graphite and silicon of identical silicon contents (.apprx.900 mA h g-1). Base (NH4OH) catalyzed composites perform substantially better than acid (HCl) catalyzed composites. The exptl. results have yet to demonstrate any real advantage of the composites over graphite in terms of cycleability. Nevertheless, this approach should not be dismissed as the network material in this study may not have been optimized.
IT **7440-21-3**, Silicon, uses
(si-O network encapsulated graphite-silicon mixts. as neg. electrodes for **lithium-ion** batteries)
RN 7440-21-3 HCAPLUS
CN Silicon (CA INDEX NAME)

Si

IT **1185-55-3**
(silicon-oxygen network encapsulated graphite-silicon mixts. as neg. electrodes for **lithium-ion** batteries)
RN 1185-55-3 HCAPLUS
CN Silane, trimethoxymethyl- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72
IT Sol-gel processing
(**coating**; si-O network encapsulated graphite-silicon mixts. as neg. electrodes for **lithium-ion** batteries)
IT Secondary batteries
(lithium; silicon-oxygen network encapsulated graphite-silicon mixts. as neg. electrodes for **lithium-ion** batteries)
IT Encapsulation
(si-O network encapsulated graphite-silicon mixts. as neg. electrodes for **lithium-ion** batteries)
IT Battery anodes
(silicon-oxygen network encapsulated graphite-silicon mixts. as neg. electrodes for **lithium-ion** batteries)
IT **Coating** process
(sol-gel; si-O network encapsulated graphite-silicon mixts. as neg. electrodes for **lithium-ion** batteries)
IT **7440-21-3**, Silicon, uses
(si-O network encapsulated graphite-silicon mixts. as neg. electrodes for **lithium-ion** batteries)
IT **1185-55-3** 7782-42-5, Graphite, uses
(silicon-oxygen network encapsulated graphite-silicon mixts. as neg. electrodes for **lithium-ion** batteries)
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L89 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:822805 HCAPLUS Full-text
DOCUMENT NUMBER: 133:352708
TITLE: Method of fabrication of protective sheet for solar **battery** module
INVENTOR(S): Yamada, Hiroshi; Ookawa, Koujiro; Suzuura, Yasuki; Goto, Takakazu; Arao, Hideki; Tsuzuki, Atsuo; Takasawa, Kazuyuki; Yamamoto, Hiroshi; Konno, Katsutoshi
PATENT ASSIGNEE(S): Dai Nippon Printing Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 116 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1054456	A2	20001122	EP 1999-125952 <--	19991227
EP 1054456	A3	20070103		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, AL, MK				
JP 2000188412	A	20000704	JP 1999-136110 <--	19990517
JP 2000332275	A	20001130	JP 1999-135688 <--	19990517
JP 2000332277	A	20001130	JP 1999-135888	19990517

			<--	
JP 2001007368	A	20010112	JP 1999-179533	19990625
			<--	
JP 2001036126	A	20010209	JP 1999-230611	19990817
			<--	
PRIORITY APPLN. INFO.:			JP 1999-135613 A	19990517
			<--	
			JP 1999-135688 A	19990517
			<--	
			JP 1999-135888 A	19990517
			<--	
			JP 1999-136110 A	19990517
			<--	
			JP 1999-179533 A	19990625
			<--	
			JP 1999-230611 A	19990817
			<--	
			JP 1998-290540 A	19981013
			<--	

ED Entered STN: 24 Nov 2000

AB A protective sheet for a solar **battery** module comprises a weather-resistant sheet of, for example, a fluorocarbon resin, and a deposited inorg. oxide thin film formed on one of the surfaces of the weather-resistant sheet. A **surface-treated** layer is formed in the weather-resistant sheet to enhance adhesion between the weather-resistant sheet and the deposited inorg. oxide thin film.

IT **7440-21-3**, Silicon, uses
(method of fabrication of protective sheet for solar **battery** module)

RN 7440-21-3 HCAPLUS

CN Silicon (CA INDEX NAME)

Si

IT **107-46-0**, Hexamethyldisiloxane **1185-55-3**, Methyl trimethoxysilane **2530-85-0**
(method of fabrication of protective sheet for solar **battery** module)

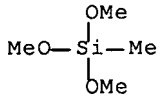
RN 107-46-0 HCAPLUS

CN Disiloxane, 1,1,1,3,3,3-hexamethyl- (CA INDEX NAME)

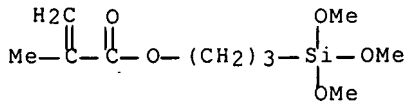
$Me_3Si—O—SiMe_3$

RN 1185-55-3 HCAPLUS

CN Silane, trimethoxymethyl- (CA INDEX NAME)



RN 2530-85-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester (CA INDEX NAME)



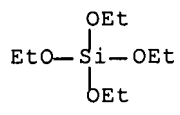
IC ICM H01L031-048
ICS H01L031-0216
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST solar **battery** module fluorocarbon resin protective sheet
IT Vapor deposition process
(chemical; method of fabrication of protective sheet for solar **battery** module)
IT Polyolefins
(cyclic; method of fabrication of protective sheet for solar **battery** module)
IT Polyesters, uses
(hydroxy-terminated; method of fabrication of protective sheet for solar **battery** module)
IT Polyurethanes, uses
(laminating adhesives; method of fabrication of protective sheet for solar **battery** module)
IT **Coating** materials
Optical transmission
Solar cells
(method of fabrication of protective sheet for solar **battery** module)
IT Acrylic polymers, uses
Fluoropolymers, uses
Glass fibers, uses
Oxides (inorganic), uses
Polycarbonates, uses
Polyesters, uses
(method of fabrication of protective sheet for solar **battery** module)
IT Permeability
(moisture; method of fabrication of protective sheet for solar **battery** module)
IT Vapor deposition process
(phys.; method of fabrication of protective sheet for solar **battery** module)
IT Vapor deposition process
(plasma; method of fabrication of protective sheet for solar **battery** module)
IT Epoxides
(silyl; method of fabrication of protective sheet for solar **battery** module)
IT **Coating** materials
(weather-resistant; method of fabrication of protective sheet for

solar **battery** module)
IT 95-14-7, 1H-Benzotriazole
(UV absorber; method of fabrication of protective sheet for solar **battery** module)
IT 7429-90-5, Aluminum, uses 7440-22-4, Silver, uses
(film; method of fabrication of protective sheet for solar **battery** module)
IT **7440-21-3**, Silicon, uses
(method of fabrication of protective sheet for solar **battery** module)
IT 103-83-3, n,n-Dimethylbenzylamine **107-46-0**, Hexamethyldisiloxane **1185-55-3**, Methyl trimethoxysilane 2269-22-9, Tri-sec-butoxyaluminum 2530-83-8 **2530-85-0** 9002-89-5, Polyvinyl alcohol 11099-06-2, Ethyl silicate
(method of fabrication of protective sheet for solar **battery** module)
IT 1306-38-3, Cerium oxide ceo2, uses 1309-37-1, Ferric oxide, uses 1314-13-2, Zinc oxide, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 13463-67-7, Titanium oxide, uses 18282-10-5, Tin dioxide 24937-78-8, Ethylene-vinyl acetate copolymer 24981-14-4, Polyvinyl fluoride 25038-59-9, Polyethylene terephthalate, uses 25038-71-5, Ethylene-tetrafluoroethylene copolymer 25038-78-2, Polydicyclopentadiene 25568-84-7, Polycyclopentadiene 27859-77-4, Polynorbornadiene
(method of fabrication of protective sheet for solar **battery** module)

L89 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:231861 HCAPLUS Full-text
DOCUMENT NUMBER: 130:299397
TITLE: Manufacture of **coated** carbon anodes for **lithium ion** secondary batteries
INVENTOR(S): Kawamoto, Koji
PATENT ASSIGNEE(S): Toyota Motor Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11096995	A	19990409	JP 1997-257228 <--	19970922
JP 3924862	B2	20070606		
PRIORITY APPLN. INFO.:			JP 1997-257228 <--	19970922

ED Entered STN: 14 Apr 1999
AB Powdered or formed C materials are washed with acid or alkaline, mixed with a solution of **coating** material, and heated for formation of **coatings** on C materials. Chemical bonded **coatings** showing peeling resistance are formed.
IT **78-10-4**, Tetraethoxysilane
(**coating** from; formation of peeling-resistant **coatings** on carbon materials for secondary lithium battery anodes)
RN 78-10-4 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester (CA INDEX NAME)

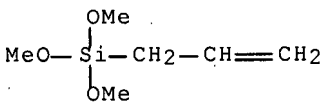


IC ICM H01M004-04
ICS H01M004-02; H01M004-58; H01M004-62
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium battery anode **coated** graphite; **coating** carbon battery anode
IT Battery anodes
Coating materials
(formation of peeling-resistant **coatings** on carbon materials for secondary lithium battery anodes)
IT 7782-42-5, Graphite, uses
(MCMB; formation of peeling-resistant **coatings** on carbon materials for secondary lithium battery anodes)
IT **78-10-4**, Tetraethoxysilane 1310-65-2, Lithium hydroxide
(**coating** from; formation of peeling-resistant **coatings** on carbon materials for secondary lithium battery anodes)
IT 7631-86-9P, Silica, uses 13568-46-2P
(**coating**; formation of peeling-resistant **coatings** on carbon materials for secondary lithium battery anodes)

L89 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:340938 HCAPLUS Full-text
DOCUMENT NUMBER: 127:21008
TITLE: Lithium secondary batteries using **nonaqueous electrolytes**
INVENTOR(S): Fukunaga, Takao
PATENT ASSIGNEE(S): Japan Storage Battery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09082313	A	19970328	JP 1995-255527 <--	19950907
PRIORITY APPLN. INFO.:			JP 1995-255527 <--	19950907

ED Entered STN: 29 May 1997
AB Title batteries have cathodes containing **Li ion** and anodes prepared from **Li ion**-absorbing and discharging C materials, one part of which are **coated** with Si compds. Alternatively, the Si compds. are **coated** on one part of the above anodes. Title batteries have long cycle life and improved capacity.
IT **2551-83-9**, Allyltrimethoxysilane
(**coating** for graphite; **nonaq. electrolyte** Li secondary battery with Si-**coated** carbon as anodes)
RN 2551-83-9 HCAPLUS
CN Silane, trimethoxy-2-propen-1-yl- (CA INDEX NAME)



IC ICM H01M004-02
ICS H01M004-58; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium battery carbon anode silicon **coating**; cathode **lithium ion** battery
IT Battery anodes
(Si-**coated**; **nonaq. electrolyte** Li secondary battery with Si-**coated** carbon as anodes)
IT **Coating materials**
(for graphite; **nonaq. electrolyte** Li secondary battery with Si-**coated** carbon as anodes)
IT Secondary batteries
(lithium; **nonaq. electrolyte** Li secondary battery with Si-**coated** carbon as anodes)
IT Battery cathodes
Battery **electrolytes**
(**nonaq. electrolyte** Li secondary battery with Si-**coated** carbon as anodes)
IT 7782-42-5, Graphite, uses
(anodes; **nonaq. electrolyte** Li secondary battery with Si-**coated** carbon as anodes)
IT 12190-79-3, Cobalt lithium oxide (CoLiO2)
(cathodes; **nonaq. electrolyte** Li secondary battery with Si-**coated** carbon as anodes)
IT 541-02-6 999-97-3, Hexamethyldisilazane 1719-57-9, Chloromethyldimethylchlorosilane **2551-83-9**, Allyltrimethoxysilane 24801-88-5, 3-Isocyanatopropyltriethoxysilane 31001-77-1, (3-Mercaptopropyl)methyldimethoxysilane
(**coating** for graphite; **nonaq. electrolyte** Li secondary battery with Si-**coated** carbon as anodes)
IT 21324-40-3, Lithium hexafluorophosphate
(**electrolytes**; **nonaq. electrolyte** Li secondary battery with Si-**coated** carbon as anodes)

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     (FILE 'HOME' ENTERED AT 10:44:06 ON 06 NOV 2007)

     FILE 'HCAPLUS' ENTERED AT 10:45:26 ON 06 NOV 2007
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                 SEL RN

     FILE 'REGISTRY' ENTERED AT 10:45:43 ON 06 NOV 2007
L2             7 SEA ABB=ON  PLU=ON  (2768-02-7/BI OR 337529-55-2/BI OR
                 620168-38-9/BI OR 7440-21-3/BI OR 7440-44-0/BI OR 7631-86-9
                 /BI OR 7782-42-5/BI)
L3             1 SEA ABB=ON  PLU=ON  7440-21-3/RN
L4          5231 SEA ABB=ON  PLU=ON  (SI(L)O)/ELS(L)2-3/ELC.SUB
L5          5231 SEA ABB=ON  PLU=ON  L4 AND L4
L6             3 SEA ABB=ON  PLU=ON  L4 AND L2
L7        274031 SEA ABB=ON  PLU=ON  (SI(L)O(L)C)/ELS(L)4/ELC.SUB
L8             1 SEA ABB=ON  PLU=ON  L7 AND L2
L9          1776 SEA ABB=ON  PLU=ON  L5 NOT 1.7-100/O
L10         1095 SEA ABB=ON  PLU=ON  L9 NOT 0-0.9999/O
L11          466 SEA ABB=ON  PLU=ON  L10 AND TIS/CI
L12          334 SEA ABB=ON  PLU=ON  L11 NOT 1-100/M
L13           97 SEA ABB=ON  PLU=ON  L12 AND 2/ELC.SUB
L14       247430 SEA ABB=ON  PLU=ON  L7 NOT PMS/CI
L15        46678 SEA ABB=ON  PLU=ON  L14 NOT 1-100/NR


     FILE 'HCAPLUS' ENTERED AT 11:17:18 ON 06 NOV 2007
L16              QUE ABB=ON  PLU=ON  PARTICL? OR MICROPARTICL? OR PARTICULAT
                 ? OR DUST? OR GRIT? OR GRAIN# OR GRANUL? OR POWDER? OR
                 SOOT? OR SMUT? OR FINES# OR PRILL? OR FLAKE# OR PELLET
L17              QUE ABB=ON  PLU=ON  MU OR M(A)U OR MICRON OR MICROMETER
                 OR MICRO(W)METER OR NANOMETER OR NANO(W)METER OR  NM OR
                 N(A)M OR MM OR M(A)M
L18              QUE ABB=ON  PLU=ON  BATTERY OR BATTERIES
L19       483078 SEA ABB=ON  PLU=ON  L3
L20         7485 SEA ABB=ON  PLU=ON  L13
L21              QUE ABB=ON  PLU=ON  NEGATIVE ELECTROD# OR ANOD## OR
                 NEG?(A)ELECTROD#
L22          151 SEA ABB=ON  PLU=ON  L20(L)L21
L23              QUE ABB=ON  PLU=ON  NEGATIVE? ELECTROD# OR ANOD## OR
                 NEG?(A)ELECTROD#
L24         2249 SEA ABB=ON  PLU=ON  L23(L)L19
L25          151 SEA ABB=ON  PLU=ON  L20(L)L23
L26       641795 SEA ABB=ON  PLU=ON  L16(L)(SIZE# OR DIAMETER? DIAMETRE? OR
                 RADIUS OR RADII OR DIMENSION? OR WIDTH? OR WIDENESS?)
L27       438763 SEA ABB=ON  PLU=ON  L16(2A)(SIZE# OR DIAMETER? DIAMETRE?
                 OR RADIUS OR RADII OR DIMENSION? OR WIDTH? OR WIDENESS?)
L28           77 SEA ABB=ON  PLU=ON  L24 AND L27
L29            3 SEA ABB=ON  PLU=ON  L25 AND L27
L30           62 SEA ABB=ON  PLU=ON  L28 AND L17
                 E   BATTERY ANODES/CT
L31        19057 SEA ABB=ON  PLU=ON  "BATTERY ANODES"+PFT,NT/CT
L32           51 SEA ABB=ON  PLU=ON  L30 AND L31
                 E  COATING MATERIALS/CT
L34       388495 SEA ABB=ON  PLU=ON  "COATING MATERIALS"+PFT,NT/CT
L35           19 SEA ABB=ON  PLU=ON  L24 AND L31 AND L34
L36            0 SEA ABB=ON  PLU=ON  L35 AND L17
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L37        1276 SEA ABB=ON  PLU=ON  (LI OR LITHIUM)(2A)(OCCLUD? OR
                RELEAS?)
L38           1 SEA ABB=ON  PLU=ON  L35 AND L37
L39           2 SEA ABB=ON  PLU=ON  L28 AND L37
L40             QUE ABB=ON  PLU=ON  (NONAQUEOUS OR NONAQ# OR NON(A)(AQ# OR
                AQUEOUS?))(2A)ELECTROLYT?
L41          10 SEA ABB=ON  PLU=ON  L32 AND L40
L42           5 SEA ABB=ON  PLU=ON  L35 AND L40
L43          15 SEA ABB=ON  PLU=ON  L41 OR L42
L44          65 SEA ABB=ON  PLU=ON  L25 AND L40
L45           2 SEA ABB=ON  PLU=ON  L44 AND  L26
L46         246 SEA ABB=ON  PLU=ON  L20 AND L26
L47           3 SEA ABB=ON  PLU=ON  L46 AND L40
L48         163 SEA ABB=ON  PLU=ON  L46 AND L17
L49           4 SEA ABB=ON  PLU=ON  L48 AND L23
L50           5 SEA ABB=ON  PLU=ON  L45 OR L47 OR L49
L51           3 SEA ABB=ON  PLU=ON  L46 AND L40
L52           5 SEA ABB=ON  PLU=ON  L31 AND L46
L53           7 SEA ABB=ON  PLU=ON  (L50 OR L51 OR L52)
L54          49 SEA ABB=ON  PLU=ON  L46 AND AMORPH?
L55           5 SEA ABB=ON  PLU=ON  L54 AND DISPERS?
L56           0 SEA ABB=ON  PLU=ON  L54 AND L18
L57           8 SEA ABB=ON  PLU=ON  L46 AND L18
                E  COMPOSITES/CT
L58      144234 SEA ABB=ON  PLU=ON  COMPOSITES+PFT,NT/CT
L59           9 SEA ABB=ON  PLU=ON  L46 AND L58
L60           9 SEA ABB=ON  PLU=ON  L54 AND (L58 OR COMPOSIT?)
L61          24 SEA ABB=ON  PLU=ON  L57 OR L59 OR L60
L62          25 SEA ABB=ON  PLU=ON  L53 OR L61
L63       91757 SEA ABB=ON  PLU=ON  L15
L64       91757 SEA ABB=ON  PLU=ON  L15
L65        4958 SEA ABB=ON  PLU=ON  L64 AND (L19 OR L20)
L66          13 SEA ABB=ON  PLU=ON  L65 AND CONDUCT?(2A)COAT?
L67           7 SEA ABB=ON  PLU=ON  L65 AND (LI OR LITHIUM)(2A)ION?
L68          35 SEA ABB=ON  PLU=ON  L65 AND (L18 OR L31)
L69           3 SEA ABB=ON  PLU=ON  L68 AND SURFACE TREAT?
L70           3 SEA ABB=ON  PLU=ON  L68 AND SURFACE(2A)TREAT?
L71           3 SEA ABB=ON  PLU=ON  L68 AND L40
L72          11 SEA ABB=ON  PLU=ON  L67 OR (L69 OR L70 OR L71)
L73           1 SEA ABB=ON  PLU=ON  L72 AND L1
                E  DISPERSION (OF MATERIALS)/CT
L74       30700 SEA ABB=ON  PLU=ON  "DISPERSION (OF MATERIALS)"+PFT,NT/CT
L75           0 SEA ABB=ON  PLU=ON  L62 AND L74
L76          25 SEA ABB=ON  PLU=ON  L62 OR L75
                E AMORPHOUS/CT
L77         126 SEA ABB=ON  PLU=ON  L63 AND (LI OR LITHIUM)(2A)ION#
L78          12 SEA ABB=ON  PLU=ON  L77 AND L40
L79           6 SEA ABB=ON  PLU=ON  L77 AND ANOD##(2A)ACTIV?
L80           7 SEA ABB=ON  PLU=ON  L77 AND (CONDUCT?(A)COAT? OR L34)
L81          29 SEA ABB=ON  PLU=ON  L72 OR (L78 OR L79 OR L80)
L82          10 SEA ABB=ON  PLU=ON  L81 AND COAT?
L83           8 SEA ABB=ON  PLU=ON  L43 AND (1840-2003)/PRY,AY,PY
L84          16 SEA ABB=ON  PLU=ON  L76 AND (1840-2003)/PRY,AY,PY
L85          10 SEA ABB=ON  PLU=ON  L82 AND (1840-2003)/PRY,AY,PY
L86           1 SEA ABB=ON  PLU=ON  L1 AND (L83 OR L84 OR L85)
L87           7 SEA ABB=ON  PLU=ON  L83 NOT L86
L88          16 SEA ABB=ON  PLU=ON  L84 NOT L86
L89           9 SEA ABB=ON  PLU=ON  L85 NOT
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